NDEX OF SUBJECTS.

TRANSACTIONS AND ABSTRACTS. 1918.

(Marked T., and A., i and A., ii respectively.)

A.

Abalone. See Haliotis.

Abietic acid, cerous salt (Morrell), T., 120; A., i, 98.

Absorption apparatus. See Gas-absorp-

tion apparatus.

Acetaldehyde, preparation of (Scheller), A., i, 100; (Union Carbide Co.), A., i, 154; (Dreyfus), A., i, 251.

mobility of ions in vapour of (YEN),

A., ii, 213.

preparation of acetic acid from (BADISCHE ANILIN & SODA FABRIK), A., i, 211; (DREYFUS), A., i, 288.

formation of crotonaldehyde from (SABATIER and GAUDION), A., i,

251.

Acetamide, equilibrium of phenol, ethyl alcohol and (KREMANN and WENZING), A., i, 218.

Acetamide, bromo-, action of, with glycineanilide (Dubsky and Grän-Acher), A., i, 189.

Acetanilide, association of, in benzene (Innes), T., 433.

detection of (MAYRHOFER), A., ii, 465.

Acetic acid, preparation of, from acetaldehyde (BADISCHE ANILIN- & SODA-FABRIK), A., i, 211; (DREY-FUS), A., i, 288.

FUS), A., i, 288.

Acetic acid, lead salt, solubility of, in water (OSAKA and HARA), A., i,

153.

acetamidine salt. See Acetiminohydrin.

Acetic acid, carbamidophenyl esters of (JACOBS and HEIDELBERGER), A., i, 71.

2:6-dichlorobenzylidene ester (REICH, SALZMANN, and KAWA), A., i, 15.

Acetic acid, ethyl ester, mobility of ions in vapour of (YEN), A., ii, 213.

ethylidene ester (Societé Chimique des Usines du Rhône), A., i, 422.

2-nitro-4-cyano-6-methoxyphenyl and 3-nitro-5-cyano-p-tolyl esters (Borscore, Löwenstein, and QUAST), A., i, 12.

propyl ester, physical properties of (MATHEWS and FAVILLE), A., i,

153.

Acetic acid, estimation of (Munn), A., ii, 375.

estimation of, in mixtures with formic and lactic acids (ONODERA), A., ii, 461.

estimation of, and its separation from butyric and propionic acids (CROWELL), A., ii, 137.

Acetic acid, chloro-, p-chloroacetylcarbamidophenyl ester (JACOBS and HEIDELBERGER), A., i, 71.

cyano-, metallic salts and derivatives of (Petterson-Björck), A., i, 371.

fluorodibromo-, ethyl ester (RATHS-BURG), A., i, 333.

Acetic anhydride, preparation of (Societé Chimique des Usines du Rhône), A., i, 289.

Acetiminohydrin, preparation of (RULE), T., 11.

Acetoacetic acid, ethyl ester, conversion of, into hydrazine derivatives (BüLow and Huss), A., i, 42. sulphide of (v. Konek-Norwall), A., i, 289.

sodium derivative, addition of, to aromatic thiocarbimides (WOR-RALL), A., i, 161.

estimation of, in blood and urine (VAN SLYKE; VAN SLYKE and FITZ), A., ii, 86.

Acetoacetic acid, α-chloro-, ethyl ester, deposition of crystals of oxalic acid by (v. Konek-Norwall), A., i, 289.

Acetoaceto-m-bromoanilide (DAINS and HARGER), A., i, 239.

Acetoaceto-o-phenetidide (DAINS and HARGER), A., i, 238.

Acetone, preparation of, from butyric acid (WITZEMANN), A., i, 422. mobility of ions in vapour of (YEN), A., ii, 213.

equilibrium of ethyl ether and (SAMESHIMA), A., ii, 429.

action of the vapour of, with heated slaked lime (FREUDENHEIM), A., i, 252.

oxidation of, by potassium permanganate (WITZEMANN), A., i, 58.

detection of (Kolthoff), A., ii, 377.

detection of, in urine (TRUNKEL), A., ii, 179; (WAGENAAR; BOHRISCH), A., ii, 250.

estimation of (FIELD), A., ii, 377.

estimation of, in smokeless powders (Pieroni), A., ii, 464. estimation of, in blood and urine

estimation of, in blood and urine
(VAN SLYKE; VAN SLYKE and
FITZ), A., ii, 86.

estimation of, in urine (SABEL), A., ii, 464.

Acetone substances in blood in diabetes (Kennaway), A., i, 357.

Acetone 2:4-dichlorophenylhydrazone (Bülow and Huss), A., i, 315.

Acetophenetidide, detection of (MAYR-HOFER), A., ii, 465.

Acetophenone, ω-bromo-, condensation of aldehydes with (BodForss), A., i, 229.

3-nitro-4-hydroxy- (Borsche, Löwenstein, and Quast), A., i, 14.

Acetophenoneoxime, association of, in benzene (Innes), T., 432.

Acetophenonepiperylhydrazone, p-amino-

(Weinhagen), T., 587; A., i, 395. Acetothionaceto-o- and -m-toluidides (Worrall), A., i, 161.

Aceto-o-toluidide, 4-nitro-, trimorphism of (Chattaway), T., 897.

α-Acetovaleric acid, δ-cyano-, ethyl ester (Derick and Hess), A., i, 211.

4-Acetoxy-1-tert.-amylbenzene-3-sulphonic acid, sodium salt and chloride of (Anschütz and Hodenius), A., i, 425.

o-Acetoxybenzenesulphonic acid, sodium salt and derivatives of (Anschütz and Zymandl), A., i, 424.

p-Acetoxybenzenesulphonic acid, potassium salt and derivatives of (Anschütz and Molineus), A., i, 424.
o-Acetoxybenzoic acid (acetylsalicyclic

o-Acetoxybenzoic acid (acetylsalicyclic acid; aspirin), crystallisation of (TSAKALOTOS and HORSCH), A., i, 110.

hexamethylenetetramine salt (EGGER), A., i, 299.

methyl ester, preparation of (THORP), A., i, 263.

4-Acetoxy-1-tert.-butylbenzene-3-

sulphonic acid, sodium salt and chloride of (Anschütz and Hodenius), A., i, 425.

Acetoxydihydroxybenzoic acid (FISCH-ER, BERGMANN, and LIPSCHITZ), A., i, 173.

1-Acetoxynaphthalene-2-sulphonic acid, potassium salt and derivatives of (ANSCHÜTZ and MAXIM), A., i,

2-Acetoxynaphthalene-1-sulphonic acid, sodium salt and chloride of (Anschütz and Maxim), A., i, 425.

m-α-Acetoxypropionyl-p-methoxytoluene (v. Auwers and Müller), A., i, 29.

α-Acetoxypropiophenone, and its p-nitrophenylhydrazone (v. Auwers),
 A., i, 18.

4-Acetoxytoluene-3:5-disulphonic acid, sodium salt and chloride of (Anschütz and Hodenius), A., i, 425

4-Acetoxytoluene-3:5-disulphonyldiethylamide (Anschütz and Ho-DENIUS), A., i, 425.

4-Acetoxytoluene-3-sulphonic acid, sodium salt and chloride of (Anschürz and Hodenius), A., i, 425.

Acetyl cyanide, preparation of (SCHOLL and ADLER), A., i, 482.

Acetylacetonatodiethylenediaminecobalt salts (Werner and Matissen), A., i, 379.

3-Acetyl-3:4-anisacylidenecoumarin (WIDMAN), A., i, 393.

α-Acetyl-αβ-anisacylidenecoumarinic acid. See 1-Acetyl-2-p-methoxybenzoyl-3-o-hydroxyphenylcyclopropane-1-carboxylic acid.

Acetylcarbinol, detection of (BAUDISCH), A., ii, 412.

4-Acetyldichloro-p-phenylene-1-diazo-4imides (Morgan and Cleage), T., 594; A., i, 412.

Acetylcyanonortropine (CHEMISCHE WERKE GRENZACH), A., i, 235.

Acetyl-p-diazoimides (Morgan and Cleage), T., 588; A., i, 411.

- Acetyldiphenacyl. See a-Acetyl-aB-dibenzoylethane.
- Acetylene, density of (STAHRFOSS), A., ii, 312.
 - reactions of (Hodgkinson), A., i,
 - silver derivative, preparation of (EG-GERT), A., i, 369.
 - lecture experiments with (EGGERT and Schimank), A., ii, 228.
 - sodium derivative, action of, on aldehydes and ketones (HESS and MUN-DERLOH), A., i, 291.
- α-Acetyl-α-ethylthionmalonanilic acid, ester (WORRALL), 162.
- Acetylfructose-acetone and -diacetone (FISCHER and NOTH), A., i, 227.
- 3-Acetyl-5-2'-furyl-4:5-dihydroisooxazole (DIELS and ROEHLING), A., i, 400.
- Acetylgallic acid. See Acetoxydihydroxybenzoic acid.
- Acetylglucose-acetone and -diacetone (Fischer and Noth), A., i, 226.
- δ -Acetyl-*n*-heptane- δ -carboxylic aη-dicyano-, ethyl ester (Derick and Hess), A., i, 211.
- N-Acetyl-o-hydroxylaminobenzaldehyde and its derivatives (BAMBERGER), A., i, 346.
- Acetylisethionyl chloride (Anschütz and Maxim), A., i, 426.
- 3-Acetyl-3:4-o-methoxyphenacylidenecoumarin (WIDMAN), A., i, 394.
- Acetylmethylaminobenzene-4-azo- β naphthol (Morgan and Grist), T., 694; A., i, 450.
- Acetylmethylaminobenzene-4-diazohydroxide (Morgan and Grist), T., 692; A., i, 450.
- 3-Acetyl-3:4-a-naphthacylidenecoumar-
- in (WIDMAN), A., i, 394. 4-Acetyl-2- and -3-nitro-p-phenylene-1diazo-4-imides (Morgan and Cleage), T., 591; A., i, 411.
- α-Acetyl-αβ-phenacylidenecoumaric See 1-Acetyl-2-benzoyl-3-ohydroxyphenylcyclopropane-1-carboxylic acid.
- 3-Acetyl-3:4-phenacylidenecoumarin (WIDMAN), A., i, 348.
- 3-Acetyl-2-phenyl-1:4-benzopyranol and its anhydrohydrochloride (CHATTERJI T., 446; Gноsн),
- 4-Acetyl-1-phenyl-5-methylpyrazole, hydrazone and phenylhydrazone \mathbf{and} HARGER), (Dains Α.,
- 1-Acetylpiperidine thiocyanate (POWELL and Denn), A., i, 124.

- 1-Acetyl-ar-tetrahydro-1:4-naphthylenediamine (GREEN and Rowe), T., 959.
- Acetylthionmalonanilic acid, ethyl ester (WORRALL), A., i, 161.
- Acetylthionmalon-p-bromoanilic (Worrall), ester ethyl 162.
- Acetylthionmalon- β -naphthylamic acid, ester (WORRALL), ethyl 162.
- Acetylthionmalon-p-toluidic acid, ethyl ester, and its sodium derivative (WORRALL), A., i, 162.
- **Acid**, $C_4H_3O_4N_3$, from the action of nitric acid on proteins (MÖRNER), A., i, 198.
 - C4H5O5N3, and its ammonium salt, from oxidation of uric acid by hydrogen peroxide (VENABLE), A., i, 410.
 - C₅H₃O₃N₂, from the action of nitric acid on proteins (MÖRNER), A., i, 198.
 - C₁₀H₁₆O₂, and its silver salt, from dibromotetrahydroeucarvone (WAL-LACH and STANDACHER), A., i, 444.
 - C₁₀H₁₈O₅, and its silver salt, from menthone (WALLACH and GROTE), A., i, 544.
 - C₁₂H₁₅O₆NS, from oxidation of 1-ptoluenesulphonylguvacine (FREU-DENBERG), A., i, 403.
 - $C_{14}H_{13}O_4N$, from 2-acetyl-3:5-dimethylpyrrole-2-carboxylic acid and furfuraldehyde (Finzi and Vecchi), A., i, 447.
 - C₃₁H₃₂O₁₆, from the leaves of Adonis HART, vernalis(HEYL, and SCHMIDT), A., i, 208.
- Acids, electrical conductivity of, in aqueous solution (Gноян), Т., 790; A., ii, 423.
 - conductivity minimum for neutralisation of (TREADWELL), A., ii, 288.
 - formation of water in the action of bases with (FRANCK), A., ii, 112.
 - penetration of cells by (Crozier), A., i, 279.
 - detection of, in blood (STRAUB and MEIER), A., ii, 467. estimation of, colorimetrically (BAR-
 - NETT and CHAPMAN), A., ii, 404.
 - estimation of, by a physico-chemical volumetric method (DUBRISAY), A., ii, 368.
 - aliphatic, affinity values of (LE BAS), A., i, 153.
 - decomposition of, in the body (LENK), A., i, 281.

Acids, aliphatic, halogen-substituted, stability of, in aqueous solution (Drushel and Simpson), A., i, 57; (Simpson), A., i, 250.

aromatic, action of oxalyl chloride on (ADAMS, WIRTH, and FRENCH), A., i, 165.

bromohydroxy-, action of potassium iodide on (BIILMANN), A., i, 212.

carboxylic, constitution of, and optical properties (HANTZSCH), A., ii, 4. azides and hydrazides of (Curtius), A., i, 44; (Curtius and Hormann), A., i, 293.

chemically pure, distillation apparatus for preparation of (KRUMMENACH-ER), A., ii, 438.

fatty, effect of water on the action of aluminium with (SELIGMAN and WILLIAMS), A., i, 333.

WILLIAMS), A., i, 333. estimation of, in blood (Csonka), A., i, 275.

estimation of, in soaps (Bosshard and Comte), A., ii, 462.

mineral, action of, on germination (MAQUENNE and DEMOUSSY), A., i, 243.

organic, distillation of, with water (ECHSNER DE CONINCK and RAYNAUD; ECHSNER DE CONINCK), A., i, 523.

ammonium salts (McMaster and Wright), A., i, 263.

of the oxalic acid series, and their esters, dissociation constants of (PALOMAA), A., ii, 435.

of the paraffin series, ionisation and structure of (Derick and Hess), A., i, 211.

Acid chlorides, catalytic transformation of, into nitriles (MAILHE), A., i, 532.

Acid equivalents, determination of (WATERMAN), A., i, 63.

Acidosis (PALMER and VAN SLYKE), A., i, 142; (BARNETT), A., i, 204; (VAN SLYKE), A., i, 204; ii, 86; (VAN SLYKE and FITZ), A., ii, 86.

Acridine derivatives, preparation of (MAYER and STEIN), A., i, 36.

Acridine, diamino-, sulphate, effect of, on the bactericidal properties of blood (Browning and Gulbransen), A., i, 282.

1-mono- and 1:3-di-nitro- (MAYER and STEIN), A., i, 37.

Acridine colouring matters (AKTIEN GESELLSCHAFT FÜR ANILIN-FABRIKATION), A., i, 272.

mercury compounds of (Society of Chemical Industry in Basle), A., i 306.

2-Acrylyl-3-sulphamidobenzoic acid, 2trichloro-, and its methyl ester (ZINCKE and SCHÜRMANN), A., i, 551.

and Schurmann), A., i, 551.

Actinium, the parent of (Soddy, Cranston, and Hirchins), A., ii, 211; (Hahn and Meitner), A., ii, 345.

Adamkiewicz reaction (Voisenet), A., ii, 280.

Address, presidential (POPE), T., 289. Adenine phosphotungstate (DRUMMOND), A., i, 337.

Adipic acid, excretion of, from the animal body (MORI), A., i, 466.

Adonis vernalis, constituents of the leaves of (HEYL, HART, and SCHMIDT), A., i, 208.

Adrenaline (suprarenine; epinephrine), toxic action of (Loew), A., i, 281.

Adsorption (Berczeller), A., i, 101; (Berczeller and Hetenyi), A., ii, 62, 99.

by fuller's earth (SEIDELL), A., ii, 62. of dyes and of bacteria (BECHHOLD), A., i, 516.

of electrolytes by proteins (J. A. and W. H. WILSON), A., ii, 260.

of gases by solids (LANGMUIR), A., ii, 430.

Adsorption compounds (HALLER), A., ii, 259.

Aerolites, phenomena of (Véronnet), A., ii, 439.

Esculic acid, and its salts (MASSON), A., i, 518.

Esculinic acid, and its salts (MASSON)
A., i, 518.

Affinity, chemical, nature of (CIAMI-CIAN and PADOA), A., ii, 74. of aliphatic acids (LE BAS), A., i, 153.

ir. See Atmospheric air.

alveolar. See Alveolar air.

Albumin, denaturation of, by heat (Homer), A., i, 138.

decomposition of, by bacteria (SASAKI and OTSUKA), A., i, 145.

distinction between pathological albuminoids and (PAGEL), A., ii, 466.

detection of (LEONE), A., ii, 416. detection of, in urine (LENZ), A., ii, 88; (BARBE; JUSTIN-MUELLER),

A., ii, 467. estimation of, volumetrically, in urine

(JUSTIN-MUELLER), A., ii, 23. Ovalbumin, preparation and refractive

index of (Haās), A., i, 412.

Albuminoids, pathological, distinction between albumin and (PAGEL), A., ii, 466.

Albumose-silver solutions, recovery and estimation of silver in (MAUE), A., ii, 454.

Alchemists, Dutch (JORISSEN), A., ii, 164, 437.

Alcohol, $C_{10}H_{16}O$, from B-terpincol nitrosochloride (WALLACH WALTER), A., i, 440.

 $C_{10}H_{18}O$, frommenthane-2:4-diol (WALLACH and PELIKAN), A., i, 446.

C₂₀H₄₂O, from wheat grains (ELLIS), A., i, 417.

Alcohols, preparation of (Pont NEMOURS & Co.), A., i, 521.

adsorption by (Berczeller and HETÉNYI), A., ii, 99.

effect of water on the action of aluminium with (SELIGMAN and WILLIAMS), A., i, 333.

action of oxalyl chloride on (ADAMS, WIRTH, and FRENCH), A., i, 165.

disinfection by (Christiansen), A.,

aliphatic, action of phosphorus trichloride on (MILOBENDZKI SACHNOWSKI), A., i, 477.

aromatic, action of, with aromatic compounds in presence of aluminium chloride (Huston and Friede-MANN), A., i, 299.

Aldehydes, preparation of (ROSENMUND; ROSENMUND and ZETZSCHE), A., i, 300.

condensation of ω-bromoacetophenone with (Bodforss), A., i, 229.

condensation of, with dimethyl diketone oxime (DIELS), A., i, 448.

reduction of, to alcohols (LEVENE and TAYLOR), A., i, 422.

action of sodium acetylide on (HESS and Munderlon), A., i, 291.

effect of, on alcoholic fermentation

(Neuberg), A., i, 469. colour reactions of fluorene with

(GUGLIALMELLI and DELMON), A., i, 161.

detection of, with thiophen (FEARON), A., ii, 462.

detection of, in ethyl ether (MAUE), A., ii, 336.

2-p-Aldehydobenzoylbenzoic acid (CHE-MISCHE FABRIK GRIESHEIM-ELEK-TRON), A., i, 264.

Aldehydocamphoceanic acid (camphor-aldehydic acid), and its derivatives (BREDT), A., i, 116.

4-Aldehydo-2'-carboxybenzophenone. See 2-p-Aldehydobenzoylbenzoic acid.

Algodonite (Borgström), A., ii, 169. Alizarin, dibenzoyl derivative (REVER-DIN), A., i, 536.

Alkali perarsenates and perphosphates, preparation of (Aschkenasi), A., ii, 166.

Alkali iodides, action of chlorine on (RAE), T., 880.

metals, absorption spectra of solutions of, in liquid ammonia and methylamine (Gibson and Argo), A., ii, 417.

estimation of, with perchloric acid (Gooch and BLAKE), A., ii, 20.

phosphates, action of magnesium chloride with (BALAREFF), A., ii,

polysulphides (THOMAS and RULE), A., ii, 43.

Alkalis, estimation of, colorimetrically (BARNETT and CHAPMAN), A., ii, 404.

estimation of, in silicates (Wenger and Brange), A., ii, 275.

Alkali equivalents, determination of (WATERMAN), A., i, 63.

Alkalimetry, errors in, due to carbon dioxide dissolved in distilled water (Bruhns), A., ii, 453.

Alkaline earth metals, absorption spectra of solutions of, in liquid ammonia and methylamine (GIBSON and Argo), A., ii, 417.

basic salts of, with organic acids (Belloni and Bacci), A., i, 64.

Alkaloids, hydrogenated, preparation of (BOEHRINGER & SÖHNE), A., i, 546.

surface tension of solutions of (BERC-ZELLER and SEINER), A., i, 143.

metallic derivatives of (RAKSHIT), T., 466; A., i, 350.

fixation of, by substances in the animal body (van Leeuwen), A., i, 463.

of the calabar bean. See Calabar bean.

cinchona. See Cinchona alkaloids. from cocaine. See Cocaine.

ipecacuanha. See Ipecacuanha. morphine. See Morphine alkaloids.

of the pomegranate tree (HESS and EICHEL), A., i, 33, 34, 404. from quinine. See Quinine.

Alkyl iodides, relative activity of, with sodium a-naphthoxide in methyl alcohol (Cox), T., 821.

Alkylanilino-groups, replacement of, by aniline groups in amides (DE BRUIN), A., i, 297.

Alkylation, preparation of reagents for (Irvine and Haworth), A., i, 421.

Alkylselenocarbamides, preparation of and their compounds with alkyl haloids (CHEMISCHE FABRIK VON HEYDEN), A., i, 482.

Alkylthioglucosides, synthesis (Schneider, Sepp, and Stiehler), A., i, 252.

Allene derivatives, spectrochemistry of

(v. Auwers), A., ii, 342. "Allocain A." See B Benzoic acid. $oldsymbol{eta}$ -ethylamino- $oldsymbol{a}$ -phenylpropyl ester. "Allocain S." See Benzoic

β-diethylamino-a-phenylpropyl ester. Alloxan, solubility and constitution of (BIILMANN and BENTZON), A., i,

Alloxantin, solubility and constitution of (BIILMANN and BENTZON), A., i,

Alloys, molecular condition of, in the crystalline state (MASING), A., ii,

electrolytic deposition of (KREMANN and Breymesser), A., ii, 57.

galvanic potential of (TAMMANN), A., ii, 443.

eutectic, temperature measurement by means of (STEINMETZ), A., ii, 58. metallic (PARRAVANO), A., ii, 198.

Allyl bromide, action of mesityl oxide and zinc with (ENKLAAR), A., i, 154.

Allylborneol, and its phenylurethane (HALLER and LOUVRIER), A., i, 397.

Allylcampholenic acid, and its amide and nitrile (HALLER and LOUVRIER), A., i, 397.

Allylcamphoroxime, and its phenylurethane (HALLER and LOUVRIER), A., i, 397.

Allylselenocarbamide, and its mercury and lead salts (CHEMISCHE FABRIK von Heyden), A., i, 482.

Allylthiocarbimide, injestion, metabolism and excretion of (PETERSON), A., i, 362.

Aloins (LEGER), A., i, 120.

Alums, crystalline structure of (VEGARD and Schjelderup), A., ii, 156; (Niggli; Schaefer and Schubert), A., ii, 315.

Aluminium, space lattice structure of (SCHERRER), A., ii, 113.

effect of water on the action of, with acids, alcohols, phenols and naphthols (SELIGMAN and WILLIAMS), A., i, 333.

distribution of, in plants (STOKLASA, Šebor, ZDOBNICKÝ, TÝMICH, Horák, Němec, and Cwach), A., i, 475.

Aluminium alloys, analysis of (COLLITT and REGAN), A., ii, 175.

with manganese, estimation of manganese in (CLENNELL), A., ii, 176.

Aluminium chloride, solubilities (LLOYD), A., ii, 221. action of, on cymene (Schorger),

A., i, 61.

Aluminium hydroxide, colloidal, retardation of reactions in (REITSTÖTTER), A., ii, 102; (Vorländer), A., ii, 301; (FREUNDLICH and REITSTÖT-TER), A., ii, 393.

oxide (alumina), occurrence of, in feathers of birds (GONNERMANN),

A., i, 465.

equilibrium of lime, silica and (NEUMANN), A., ii, 441.

equilibrium of magnesia, silica and (RANKIN and MERWIN), A., ii,

selenide, formation of (Chikashige and Aoki), A., ii, 114.

telluride, formation of (CHIKASHIGE and Nosé), A., ii, 114.

Aluminium, separation of iron, mangantitanium, zirconium (Brown), A., ii, 84.

Alveolar air, tension of carbon dioxide in (JENNI), A., i, 462.

Amblygonite fromCaceres, (Dörpinghaus), A., ii, 79.

Amides, constitution of (Bougault), A., i, 338.

replacement of an alkylanilino-group by an aniline group in (DE BRUIN), A., i, 297.

action of hypobromous, hypochlorous, and hypoiodous acids on (Bois-MENU), A., i, 423.

aromatic (Jacobs \mathbf{and} HEIDEL-BERGER), A., i, 68.
preparation of acyl derivatives of

(Perelstein and Bürgi), A., i,

Amidine salts (Rule), T., 3; A., i,

Amidopyrine. See Pyramidone.

Amines, conversion of, into carbamide in the animal organism (Löffler), A., i, 242.

separation and estimation of, in presence of ammonia (Weber and Wilson), A., ii, 377.

aromatic, separation of primary and secondary (PRICE), A., i, 218. halogen derivatives, and their

analysis (DAINS, VAUGHAN, and JANNEY), A., i, 340.

bromo-alkylated (v. BRAUN. HEIDER, and MÜLLER), A., i, 107, 269, 406.

primary, catalytic formation nitriles from (MAILHE and DE GODON), A., i, 256.

secondary, separation of, from the catalytic hydrogenation of aniline (Fouque), A., i, 106.

secondary and tertiary, conversion of, into nitriles (MAILHE), A., i, 336.

Amines, tertiary, preparation of (MAT-TER), A., i, 259. reactions of (KLAUS and BAUDISCH),

reactions of (KLAUS and BAUDISCH), A., i, 430.

Amino acids in lymph and blood (Hendrix and Sweet), A., i, 137. copper salts, pharmacology and toxicology of (Huber), A., i, 361. estimation of, with formaldehyde (Jodid), A., ii, 379.

toxicology of (HUBERJ, A., 1, our estimation of, with formaldehyde (JODIDI), A., ii, 379.

a-Amino-acids, influence of inorganic haloids on the rotatory power of (CLOUGH), T., 526; A., ii, 255.

Amino-oxides (BAUDISCH), A., i, 430.

Ammines, metallic (EPHRAIM and ROSENBERG), A., i, 390.

dissociation temperatures for

dissociation temperatures for (EPHRAIM and ROSENBERG), A., ii, 115.

Ammonia, formation of, from its elements (MAXTED), A., ii, 195.

formation of, by reduction of oxides of (Guye and Schneider), A., ii, 310.

synthesis of (MAXTED), A., ii, 310.

at high temperatures (MAXTED), T., 168, 386; A., ii, 165, 230. spectrum of, and its presence in the solar spectrum (FOWLER and GREGORY), A., ii, 282.

liquid, specific heat and latent heat of vaporisation of (OSBORNE and VAN DUSEN) A ii 60

VAN DUSEN), A., ii, 60. vapour pressure of (KEYES and BROWNLEE), A., ii, 60.

critical density and surface tension of

(BERTHOUD), A., ii, 310. volatilisation of (WEGSCHEIDER),

A., ii, 298. still-head for distillation of (HUTIN), A., ii, 128.

action of carbonyl chloride with (Werner), T., 694; A., i, 528.

oxidation of, to ammonium nitrite in the air (GENELIN), A., ii, 438.

catalytic oxidation of (TAYLOR and DAVIS), A., ii, 42.

catalytic oxidation of, in presence of platinum and rhodium (Wenger and Urfer), A., ii, 230.

effect of acetylene on the oxidation of (TAYLOR and CAPPS), A., ii, 265.

compounds of mercury salts with (HOLMES), T., 74; A., ii, 76. detection of, in urine, by nesslerisation (SUMNER), A., ii, 239.

estimation of, gravimetrically, as ammonium chloride (VILLIERS), A., ii, 332.

estimation of, in placenta tissue (HAMMETT), A., ii, 250.

Ammonia, estimation of, in urine (LE-CLERE), A., ii, 369.

estimation of, in urine and serum (WIESSMANN), A., ii, 332.

and its salts, estimation of pyridine bases in (HARVEY and SPARKS), A., ii, 180.

Ammonification, effect of oxygen and carbon dioxide on (Plummer), A., i, 90.

in soils (MIYAKE), A., i, 91.

Ammonium iodide, preparation of (Broeksmit), A., ii, 16.

molybdate, reaction of potassium isobutylxanthate with (DIAZ DE PLAZA), A., i, 249.

nitrate, equilibrium of barium nitrate, silver nitrate and (DE BAAT), A., ii, 190.

phosphate, effect of, on soils (ALLI-SON), A., i, 248.

sulphate, equilibrium of sodium sulphate, water and (DAWSON), T., 675; A., ii, 363; (MATIGNON and MEYER), A., ii, 66, 67, 302.

effect of, on soils (LIPMAN and GERICKE), A., i, 248.

sodium sulphate, preparation of (MATIGNON and MEYER), A., ii, 198.

Ammonium organic compounds :--

salts of organic acids (McMaster and Wright), A., i, 263.

Amyl alcohol, bromo. See Amylene

bromohydrin.

iso Amylamine phosphotung state (DRUMMOND), A., i, 336.

α-isoAmylaminoglyoxylic acid, ethyl ester dichlorophenylhydrazone (Bü-Low and Huss), A., i, 43.

Amylase, effect of nitrogenous substances on the activity of (Rockwood), A., i, 86.

tert.-isoAmylcarveol (SEMMLER, JONAS, and OELSNER), A., i, 118.

isoAmyl-α-dehydrophellandrene (SEMM-LER, JONAS, and ROENISCH), A., i, 119

sec.-isoAmyldihydrocarveol (SEMMLER, Jonas, and Oelsner), A., i. 118.

isoAmyldihydrocarvone (SEMMLER, Jonas, and Oelsner), A., i, 118.

Amylene hydrochloride, dissociation of (Colson), A., i, 97. bromohydrin, preparation of (RATH),

A., i, 249.

isoAmylmenthane (SEMMLER, JONAS, and ROENISCH), A., i, 119.

1:4-tert.-Amylphenol-3-sulphonic acid, and its sodium salt (Anschütz and Hodenius), A., i, 425.

tert.-Amylphenylene-3:4-sulphonylide (Anschütz and Hodenius), A., i, 425.

sec. - and tert.-isoAmyltetrahydrocarveols (SEMMLER, JONAS, and OELSNER), A., i, 118.

Amyrolin, crystallography and optical characters of (Rose), A., i, 266.

Anærobic nærobic culture, vo (Northrup), A., i, 468. volumeter

Anæsthetics, effect of, on permeability (OSTERHOUT), A., i, 472.

effect of, on respiration of plants (HAAS), A., i, 470.

of results of Analysis, calculation (GROSSFELD), A., ii, 366.

colorimetric (BARNETT and CHAPMAN), A., ii, 404.

combustion (LEVENE and BIEBER), A., ii, 130.

electro-volumetric, of solutions containing proteins, apparatus for (BAKER and VAN SLYKE), A., ii, 380.

graphic (GRADENWITZ; OSTWALD), A., ii, 367.

of mixed liquids (GRADENWITZ), A., ii, 245.

gravimetric, methods of (Heidenнаін), А., іі, 273.

importance of time in (KARAOG-LANOW), A., ii, 239, 241.

possible error in (ZOTIER), A., ii,

micro-chemical, of organic compounds (Dubsky), A., ii, 130.

microscopic qualitative, use of textile fibres in (CHAMOT and COLE), A., ii,

physico-chemical volumetric (Dubri-SAY), A., ii, 368.

qualitative, without using hydrogen sulphide (Almkvist), A., ii, 333. of metals of Group IIA. (SHIBKO), A., ii, 334.

of metals of Groups III. and IV. (Bolin and Starck), A., ii, 334.

spectrographic quantitative (LEME), A., ii, 172.

volumetric, method of taking aliquot parts in (Eastlack), A., 203.

of coloured acid solutions (TINGLE), A., ii, 236.

Anhydrides, aromatic, preparation of (Adams, Wirth, and French), A., i, 165.

Anhydrite, from the lava of Stromboli (PONTE), A., ii, 366.

Anhydroepiberberine-acetone (PERKIN), T., 521; A., i, 349.

isoAnhydrodihydromethylberberines. hydroxy, and their acetyl derivatives (Perkin), T., 752; A., i, 546.

n- and iso-Anhydromethylberberines, and their derivatives (Perkin), T., 746; A., i, 545.

Anhydrouzaridin (HENNIG), A., i, 95.

Anils (v. Auwers), A., i, 193.

preparation of (Reddelien), A., i, 117.

Aniline, equilibrium in the system: glycerol-water and (Kolthoff), A.,

catalytic hydrogenation of (Fouque), A., i, 106.

action of carbon tetrachloride with (HARTUNG), T., 163; A., i, 237. action of, on hæmin (Küster and

LOBMILLER), A., i, 200.

action of, on methyl iminodiacetate (DUBSKY and GRÄNACHER), A., i, 188.

and its derivatives, antiseptic properties of (KLIGLER), A., i, 564.

stannichloride, preparation and properties of (DRUCE), A., i, 535.

Aniline, bromo- and chloro-iodo-derivatives, and their derivatives (DAINS, VAUGHAN, and JANNEY), A., i, 340.

o-, m-, and p-nitro-, estimation of, in a mixture (Nichols), A., i, 217.

Aniline groups, replacement of alkylanilino-groups by, in amides (DE Bruin), A., i, 297.

Aniline-o-sulphonamide, and its derivatives (Schrader), A., i, 44.

Aniline-m-sulphonic acid, ammonium salt (McMaster and Wright), A., i, 263.

4-chloro-(ZINCKE and BAEUMER), A., i, 537.

Aniline-p-sulphonic acid (sulphanilic acid), constitution of (WATERMAN), A., i, 154.

acid and alkali equivalents of (WATER-MAN), A., i, 63.

Anilinobenzaldehyde, 2-op-dinitro-(MAYER and STEIN), A., i, 37.

2-Anilino-p-benzoquinone-4-imine crate (PICCARD and LARSEN), A., i,

3-Anilino-1:2:4-benztriazine, and its oxides (ARNDT and ROSENAU), A., i,

3-Anilino-4- and -6-chlorophthalanil (PRATT and PERKINS), A., i, 169.

3-Anilino-4:5:6-trichlorophthalanil (PRATT and PERKINS), A., i, 168.

1-Anilino-2:5-dimethylpyrrole-3:4-dicarboxylic acid, 1-op-dichloro-, ethyl ester (Bülow and Huss), A., i, 315.

a-Anilinoglyoxylic acid, ethyl ester dichlorophenylhydrazone (Bülow and

Huss), A., i, 43.

Anilinomethyl hydroxymethyl hyposulphite, o-amino- (BINZ, HUETER, and Goldenzweig), A., i, 6.

hyposulphite (BINZ, HUETER, and

GOLDENZWEIG), A., i, 5.

Anilinomethyleneacetoacetanilide, bromo- (DAINS and HARGER), A., i,

Anilinomethyleneacetoaceto-m-bromoanilide, m-bromo- (Dains and Har-GER), A., i, 239.

Anilinomethyleneacetoaceto-o-phenetidide (DAINS and HARGER), A., i,

2-Anilino-1:8-naphthasultamquinoneanil (ZINCKE and SCHÜRMANN), A., i, 550.

9-Anilinophenazoxonium, 3-amino-, 9hydrochloride, and its absorption spectra (Kehrmann and Sandoz), A., i, 126.

Animal fluids, processes of oxido-reduction in (ABELOUS and ALOY), A., i,

Animal tissues, autolysis of (Dernby), A., i, 464.

nutritive value of (OSBORNE, MENDEL, FERRY, and WAKEMAN), A., i, 139, 323.

indicators extracted from (CROZIER), A., i, 514.

action of methylene-blue with (THUN-BERG), A., i, 140.

Anions, detection of (FEIGL), A., ii,

3:4-Anisacylidenecoumarin-3-carboxylic acid, ethyl ester (WIDMAN), A., i,

Anisacylmalonic acid (WIDMAN), A., i,

Anisaldehydepiperylhydrazone (Wein-HAGEN), T., 586; A., i, 395.

3:5-dinitro-(BORSCHE, o-Anisidine, LÖWENSTEIN, and QUAST), A., i, 12.

p-Anisidine, 2:3:5-trinitro-, benzoyl derivative (REVERDIN), A., i, 536.

a-p-Anisidinoglyoxylic acid, ethyl ester dichlorophenylhydrazone (Bülow and Huss), A., i, 43.

Anisole, 2-chloro-3:5-dinitro- (Borsche, LÖWENSTEIN, and QUAST), A., i, 12. 3:5-dinitro-2:6-diamino- (Pollecoff and Robinson), T., 655; A., i, 428.

Anisoylanisylethylene oxide (Bop-FORSS), A., i, 230.

Anisyl anisylethyl ketone, and its oxime (Pfeiffer and Negreanu), A., i, 19.

p-Anisyl p-chlorocinnamylidenemethyl ketone (STRAUS and BLANKENHORN), A., i, 501.

p-Anisyl p-chlorostyryl ketone (STRAUS and Blankenhorn), A., i, 501.

4-Anisylhydantoin-1-acetic acid, sodium salts (HAHN, BURT, and JOHNSON), A., i, 80.

Anisylidene-4-bromo-2-iodoaniline (Dains, Vaughan, and Janney), A., i, 340.

1-p-Anisylidene-3-ethylindene (Wüest), A., i, 489.

1-Anisylidene-3-furfurylideneindane (Wüest), A., i, 490.

1-Anisylidene-3-furylmethylindene (Wüest), A., i, 490.

4 Anisylidenehydantoin 1 acetic salts of, and its reduction products (HAHN, BURT, and JOHNSON), A., i,

Anisyl p-methoxystyryl ketone-sulphonic acid, and its ammonium salt Preiffer and Negreanu), A., i, 19.

1-Anisylphenazothionium salts, 3:9-diamino-, diacetyl derivatives (KEHR-MANN, LIEVERMANN, and FRUMKINE), A., i, 309.

1-Anisylphenthiazine, 3:9-dinitro-, and its salts (KEHRMANN, LIEVERMANN, and FRUMKINE), A., i, 308.

Anisyl phenylethyl ketone (Pfeiffer and NEGREANU), A., i, 19.

Anisyl sulphoanisylethyl ketone, and its ammonium salt (Preiffer and NEGREANU), A., i, 20.

Annual General Meeting, T., 276. Anthocyanidins, formation of (EVEREST),

A., i, 420.

Anthocyanins, formation of (Everest), A., i, 420.

Anthracene, specific heat and heat of fusion of (HILDEBRAND, DUSCHAK, FOSTER, and BEEBE), A., ii, 29.

solubility of, in various solvents (Hildebrand, Ellefson, BEEBE), A., i, 62.

Anthracene, 9:10-dichloro-, preparation of nitric acid derivatives of (FARB-WERKE VORM. MEISTER, LUCIUS, & Brüning), A., i, 217.

Anthracene colouring matters, nitrogenous, preparation of (CHEMISCHE FABRIK GRIESHEIM ELEKTRON), A., i, 272.

Anthranil (BAMBERGER), A., i, 346.

Anthranol, 1-hydroxy-, preparation of (FARBENFABRIKEN VORM. BAYER & Co.), A., i, 111, 542. 1:8-dihydroxy- (FARBENFABRIKEN

VORM. F. BAYER & Co.), A., i, 221, 542.

CXIV. ii.

Anthraquinone, specific heat and heat of fusion of (HILDEBRAND, DUS-CHAK, FOSTER, and BEEBE), A., ii, 29.

solubility of, in various solvents (HILDEBRAND, ELLEFSON, and Вееве), А., і, 62.

estimation of (LEWIS), A., ii, 338.

Anthraquinone, 2-amino-, preparation of (Society of Chemical In-DUSTRY IN BASLE), A., i, 266. benzoyl derivative (REVERDIN), A.,

i, 536. 1:4:6-trihydroxy- (Crossley), A., i,

Anthraquinones, dihydroxy-, and their derivatives, preparation of (FARBEN-FABRIKEN VORM. F. BAYER & Co.), A., i, 180.

Anthraquinone series, preparation of nitrogenous derivatives in the (FARB-WERKE VORM. MEISTER, LUCIUS, & Brüning), A., i, 191.

Anthraquinone-2:1-acridone, 2'-amino-(ULLMANN and Dootson), A., i, 190.

Anthraquinone-2:1-acridone colouring matters (ULLMANN and Dootson), A., i, 189.

Anthraquinone-2:1:2':3'-naphthacridone (ULLMANN and Dootson), A., i,

Anthraquinonesulphonic acids, preparation of salts of (THE BARRETT Co.), A., i, 301.

Anthraquinonethioxanthone(ULLMANN),

A., i, 22.

2'-Anthraquinonyl-1-aminobenzoic acid, methyl ester (ULLMANN and Dootson), A., i, 190.

2'-Anthraquinonyl-1-aminobenzoic acid, 5'-amino-, and 5'-nitro-, and their methyl esters (ULLMANN and Doorson), A., i, 190.

o:o'-Anthraquinonyl-1:5-diaminodibenzoic acid, dimethyl ester (ULLMANN

and Dootson), A., i, 190.

2'-Anthraquinonyl-1-amino-4'-methoxybenzoic acid (ULLMANN and Dootson), A., i, 191.

2'-Anthraquinonyl-1-amino-5'-methoxybenzoic acid, methyl ester (ULLMANN and Dootson), A., i, 190.

3'-Anthraquinonyl-1-amino-2'-naphthoic acid, and its methyl ester (ULLMANN and Dootson), A., i, 191.

Anthraquinonyldihydroacridyl salts (MAYER and STEIN), A., i, 38.

Antigens (LANDSTEINER and LAMPL), A., i, 321.

Antimony, pure (GROSCHUFF), A., ii, 322.

Antimony, equilibrium of selenium and (CHIKASHIGE and FUJITA), A., ii,

action of sodium in liquid ammonia on (Peck), A., ii, 168.

Antimony alloys with bismuth and with thallium, electrolytic potential of (Bekier), A., ii, 425.

with lead (Durrer), A., ii, 217.

Antimony triiodide, metastable form of (Vournasos), A., ii, 168.

dioxide, preparation and analysis of (v. Szilagyi), A., ii, 135.

Antimony minerals from the Stanley Mine, Idaho (Shannon), A., ii, 323.

Antipyretics, electric charge produced by spraying (ZWAARDEMAKER and ZEEHUISEN), A., ii, 351.

Antipyrine

(1-phenyl-2:3-dimethyl-5pyrazolone), selenium derivatives of (v. Konek and Schleifer), A., i, 407.

detection of (MAYRHOFER), A., ii,

detection of, microchemically (Tun-MANN), A., ii, 139.

Antiseptics, value of various organic compounds as (KLIGLER), A., i, 469. Antitoxic sera, concentration of (HOMER),

A., i, 558. Apiolealdehyde, preparation of, and its action with organo-magnesium compounds (FABINYI and SZÉKI), A., i, 17.

I-Arabinose, oxidation of, in alkaline solution (NEF, HEDENBURG, and GLATTFELD), A., i, 100.

tetra-acetates of (HUDSON and DALE), A., i, 335.

Arbutin, detection of (SALOMON), A., ii,

Arecaidine, preparation of (HESS and LEIBBRANDT), A., i, 401.

Arecaine, constitution of (HESS and LEIBBRANDT), A., i, 401.

Arecoline, preparation of (Hess and LEIBBRANDT), A., i, 401.

Arginase, occurrence of, in invertebrates (CLEMENTI), A., i, 560.

Arginine in human placenta (HARDING

and FORT), A., i, 417. metabolism of. See Metabolism.

Argon, lecture experiment on the preparation of (Jorissen), A., ii, 74.

preparation of, in the laboratory (BODENSTEIN and WACHENHEIM), A., ii, 166.

density, compressibility and atomic weight of (LEDUC), A., ii, 266.

compressibility and dilatability of (LEDUC), A. ii.

Aromatic compounds, interchange of hydroxyl with halogen in (Borsche, LÖWENSTEIN, and QUAST), A., i, 11.

Arsenic trioxide, preparation and testing of (CHAPIN), A., ii, 361.

Arsenious acid, detection of, microchemically (Tunmann), A., ii, 453. Arsenates, colloidal (KLEMP and V. GYULAY), A., ii, 200.

Perarsenates, preparation of (Asch-

KENASI), A., ii, 166.

Arsenic organic compounds, aromatic (CHEMISCHE FABRIK VON F. HEY-DEN), A., i, 275.

with naphthalene derivatives (Boon and OGILVIE), A., i, 461.

Arsenic detection and estimation :detection of (SNEED), A., ii, 133. modified Marsh's apparatus for detection of (KIRKBY), A., ii, 240.

detection and estimation of, and its excretion in urine (Durer), A., i,

estimation of, in corpses (Fuhner), A., ii, 240.

11-, and 12-Arsenotungstic acids (Rosenheim and Jaenicke), A., ii,78. Arsinic acids, halogenated, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 257.

4-Arsinophenylstibinic acid, 2-nitro-(CHEMISCHE FABRIK VON F. HEY-DEN), A., i, 275.

Artemisia annua, constituents of oil from (ASAHINA and YOSHITOMI), A., i, 76.

Artichoke, Jerusalem, changes of inulin in the (COLIN), A., i, 208.

Aryl sulphites, preparation (BADISCHE ANILIN-FABRIK), A., i, 297. and SODA-

Asbestos, mixtures of metallic silver or lead salts with (BINDER), A., ii, 453. Ascaris suum, catalase (MAGATH), A., i, 279. content of

Aspartic acid, hydrazides of, and their derivatives (CURTIUS and JANSEN),

A., i, 44.

Aspergillus glaucus, effect of potassium nitrate on the growth of (WATER-MAN), A., i, 330.

Asphodels, transformation of inulenin in the tubercles of (COUVREUR), A., i, 366.

Aspirator (JOHLIN), A., ii, 358.

Aspirin. See o-Acetoxybenzoic acid. Assimilation (WILLSTÄTTER and STOLL), A., i, 207, 243.

plant. See Plants.

Association of organic compounds in benzene and alcohol solution (INNES), T., 410; A., ii, 219.

Asymmetry, molecular and physical, relation between (JAEGER), A., i, 3, 7.

Atmosphere, terrestrial, limit and composition of (Véronnet), A., ii, 439.

Atmospheric air, mobility of ions in (YEN), A., ii, 212.

solubility of, in water (Coste), A., ii, 265.

isochore for (Weiss), A., ii, 291. density of (GUYE), A., ii, 107.

measurement of radium emanation in (Olujic), A., ii, 420.

ignition of mixtures of methane and (Mason and Wheeler), T., 45; A., ii, 10, 70; (Payman and Wheeler), T., 656; A., ii, 356; (Wheeler), T., 840.

Atom, model of (WESTPHAL), A., ii, 436.

structure of (CIAMICIAN and Atoms, PADOA), A., ii, 74; (KOHL-WEILER), A., ii, 304; (STEWART), A., ii, 395.

with reference to Röntgen spectra (VEGARD), A., ii, 93, 94, 144; (SOMMERFELD; KROO), A., ii, 303.

stability of (Nicholson), A., ii, 163. Atomic frequency, relation between atomic number and (ALLEN), A., ii, 14, 15, 191.

differences of, in spectral (Bell), A., ii, 383.

Atomic numbers (ALLEN), T., 389; A., ii, 220.

relation between atomic frequency and (ALLEN), A., ii, 14, 15, 191.

differences of, in s (Bell), A., ii, 383. spectral

Atomic theory (Lorenz), A., ii, 303. Atomic weight of argon (Leduc), A., ii, 266.

of bromine (REIMAN; MURRAY), A., ii, 42.

of carbon (Stahrfoss), A., ii, 312. of dysprosium (KREMERS, HOPKINS,

and ENGLE), A., ii, 201. of helium and hydrogen A., ii, 224.

of nebulium (Nicholson), A., ii, 182. of samarium (STEWART and JAMES), A., ii, 44.

of silver (GUYE), A., ii, 112.

Atomic weights, report of the Committee on (BAXTER), A., ii, 305.

determination of (GUICHARD), A., ii, 14; (GUYE and Moles), A., ii,

40, 41; (GUYE), A., ii, 224. tables of, based on their combining weights (PANETH), A., ii, 305. variations in tables of (RENARD),

A., ii, 105.

in 1916 (Moles), A., ii, 40.

Atophan. See Phenylcinchonic acid.

Atropine, influence of, on respiratory

metabolism (KELEMAN), A., i, 511.

Augite from Stromboli (Kozu and Washington), A., ii, 271.

Aurora borealis, phenomenon o (VERONNET), A., ii, 439.

Autolysis (BRADLEY), A., i, 278.

of animal tissues (DERNBY), A., i, 464.

of organs, and their activity as antigens (SILBERSTEIN), A., i, 464.

Auxoamylases, nitrogenous (Rock-wood), A., i, 86.

α-Azido-β-phenylpropionic acid, and its salts and ethyl ester (DARAPSKY and BERGER), A., i, 508.

Azines, preparation of (G. M. and R.

ROBINSON), T., 644.

Azobenzene, association of, in benzene and alcohol (INNES), T., 430.

Azo-colouring matters (REVERDIN, RILLIET, and VERNET), A., i, 455.

preparation of (Badische Anllin- and Soda-Fabrik), A., i, 239, 272; (Farbenfabriken vorm. F. Bayen & Co.), A., i, 273.

Azoxy-compounds, cyclic (ARNDT and ROSENAU), A., i, 40.

B.

Bacilli, diphtheria, action of quinine derivatives on (SCHAEFFER), A., i, 93.

pathogenic, disinfectant action of quinine alkaloids on (BIELING), A., i, 243.

typhoid, presence of a growth-producing substance in (PACINI and RUSNELL), A., i, 329.

Bacillus coli communis, decomposition of dextrose and mannitol by (GREY), A., i, 143, 144.

Bacillus perfringens, production of acids by, and their effect on its growth (WOLF and TELFER; WOLF and HARRIS), A., i, 146.

Bacillus sporogenes, production of acids by, and their effect on its growth (WOLF and TELFER; WOLF and HARRIS), A., i, 146.

Bacteria, adsorption of, and of dyes (BECHHOLD), A., i, 516.

agglutination of (HERZFELD and KLINGER), A, i, 87.

action of cyanohydrins on (JACOBY), A. i, 363. Bacteria, scission of proteins by (SASA-KI; SASAKI and OTSUKA), A., i, 145.

metabolism of sulphur by (TANNER), A., i, 282.

decomposition of tyrosine by (RHEIN), A., i, 363; (TSUDJI), A., i, 364.

preparation of urease from (JACOBY), A., i, 132.

relation of, to the lime requirements of soils (BEAR), A., i, 206.

nitrogen-assimilating, influence on itrates on (HILLS), A., i, 328.

pathogenic anærobic, biochemistry of (Wolf and Telfer; Wolf and Harris), A., i, 146.

symbiotic, action of, on glycerol, pentoses, hexoses, and disaccharides (BIERRY and PORTIER; PORTIER and BIERRY), A., i, 358.

the Ehrlich indole reaction for cultures of (Nowicki), A., ii, 140.

estimation of nitrogen in (BRADLEY and Nichols), A., i, 281.

Bacterium acidi lactis, fermentation with (v. EULER and SVANBERG), A., i, 517.

Bacterium coli phenologenes, isolation of (Rhein), A., i, 206.

decomposition of tyrosine by (RHEIN), A., i, 363.

Baddeleyite, analysis of (Brown), A., ii, 84.

Balance, limitations of the (BLOUNT), A., ii, 15.

temperature variations of the arms of the (Guichard), A., ii, 15.

arrangement for illuminating (POR-PITT), A., ii, 164.

vacuum, cases for (BLOUNT and WOOD-COCK), T., 81; A., ii, 74.

Barium chloride, solubility of, in nitrobenzene (LLOVD), A., ii, 221.

chromate, solubility and precipitation of (WADDELL), A., ii, 407.

iodide, crystal form of (MÜGGE), A., ii, 313.

nitrate, equilibrium of ammonium nitrate, silver nitrate and (DE BAAT), A., ii, 190.

disilicate in optical glass (Bowen), A., ii, 198.

sulphate, crystalline, heat of ionisation of, and its solubility in water (MULLER), A., ii, 62.

action of sodium carbonate with, in solid form (PARKER), T., 397; A., ii, 222.

Barium organic compounds:—
ethyl phosphate, hydrated (BALAREFF), A., i, 1.

- Barium estimation and separation :--estimation of, as sulphate (KARAO-GLANOW), A., ii, 47, 126, 241, 369;
 - (WINKLER), A., ii, 451. estimation of, volumetrically (WAD-DELL), A., ii, 407.
 - estimation of, and its separation from strontium (Gooch and Soderman), A., ii, 408.
- Barwood, colouring matters of (O'NEILL
- and PERKIN), T., 125; A., i, 181. Base, C₉H₉O₃N, and its derivatives, from β-2-furylvinyl acetyl ketoxime (DIELS and ROEHLING), A., i,
 - $C_{11}H_{14}N_2$, by reduction of $C_{11}H_{14}O_2N_2$ from benzaldehyde and dimethyl diketone oxime (DIELS), A., 1, 449.
- Bases, electrical conductivity of, in aqueous solution (GHOSH), T., 790; A., ii, 423.
 - conductivity minimum for neutralisation of (TREADWELL), T., 288.
 - formation of water in the action of acids with (Franck), A., ii, 112.
 - cyclic, stability of (v. Braun), A., i, 185; (v. Braun and Köhler), A., i, 268.
 - organic, action of benzenesulphonyl chloride on, in ether solution (SCHWARTZ and DEHN), A., i, 61.
- Basking-shark. See Cetorhinus maximus.
- Bean, Chinese velvet. See Stizolobium niveum.
- rearrangement (KUHARA, Beckmann AGATSUMA, and ARAKI), A., i, 179.
- Beef, estimation of nitrogen in (Thrun and TROWBRIDGE), A., i, 324.
- Benzaldehyde, separation and estimation of benzoic acid and (GEIGER), A., ii,
- Benzaldehyde, o-chloro-, action of, on nitroamines (MAYER and STEIN), A., i, 36.
 - o-chloro-, and m-nitro-, 2:4-dichlorophenylhydrazones (Bülow Huss), A., i, 314.
 - 2:6-dichloro-, derivatives of (Reich, SALZMANN, and KAWA), A., i, 15.
 - o-nitroso-, photochemical formation of (BAMBERGER), A., i, 346. 3:4:5-trihydroxy-. See Gallaldehyde.
- Benzaldehyde-m-amino-p-tolylhydrazone (FRANZEN and MONDLANGE), A., i, 458.
- Benzaldehyde-p-nitrophenylhydrazone. acetyl derivatives (v. AUWERS), A., i,
- Benzaldehydepiperylhydrazone, paration of, and p-hydroxy- (WEIN-HAGEN), T., 586; A., i, 395.

- Benzamide, equilibrium of benzoic anhydride with (Kremann and Wenz-ING), A., ii, 72.
 - equilibrium of phenol and (KREMANN and WENZING), A., i, 218.
- Benzamide, 3-amino-6-hydroxy-, and its 3-chloroacetyl derivative (JACOBS and Heidelberger), A., i, 68.
 - 2:6-dichloro- (Reich, Salzmann, and KAWA), A., i, 15.
- Benzanthrone, synthesis of (SCHAAR-SCHMIDT and KORTEN), A., i, 433; (SCHAARSCHMIDT and GEORGEACOPOL), A., i, 434.
- Benzanthronecarboxamide (Schaar-SCHMIDT and KORTEN), A., i, 434.
- Benzene, structure of (LACOMBLÉ), A., i, 257; (Lagerlöf), A., ii, 31; (v. Auwers), A., ii, 343.
 - absorption spectra of (Masson and FAUCON), A., ii, 210.
 - absorption of, by light oils (H. S. and
 - M. D. Davis), A., ii, 411. association of organic compounds in solution in (INNES), T., 410; A., ii, 219.
 - equilibrium of carbon disulphide and (SAMESHIMA), A., ii, 429.
 - estimation of, in gases (Anderson), A., ii, 84; (H. S. and M. D. Davis and MacGregor), A., ii, 411.
- Benzene, 4-bromo- and 4-chloro-2-nitrochlorothiol-(ZINCKE and BAEUMER), A., i, 537.
 - p-dibromo-, solubility of, in various solvents (HILDEBRAND, ELLEFSON, and BEEBE), A., i, 62.
 - 2-chloro-1:4-diodo- (DAINS, V HAN, and JANNEY), A., i, 341. VAUG-
 - chloro-di- and -tri-thiol-, and their derivatives (POLLAK, v. FIEDLER, and Rотн), A., i, 499.
 - trichloro-, reactions of sodium methoxide with (Holleman), A., i,
 - nitro-derivatives, equilibrium of ptoluidine and carbamide with (KRE-MANN and PETRITSCHEK), A., ii,
 - nitro-, boiling point of mixtures of hexane and (BÜCHNER), A., ii, 9. electrolytic reduction of (Sнол), A., i, 342.
 - nitroso-, diazotisation of (BAMBERGER), A., i, 353.
 - thiol-derivatives of (POLLAK and SCHADLER), A., i, 497; (POLLAK, v. Fiedler, and Roth), A., i 498.
- Benzeneazobenzoic acid, 2:4-dinitro-, and its silver salt, and 4-nitro-2'nitroso- (GIUA), A., i, 552.

- Benzeneazo-αα dibenzoyl-β-Δα-propenyl ether, p-amino-, acetyl derivative (Dimroth, Leichtlin, and Friede-mann), A., i, 129.
- Benzeneazo-\$-naphthol, 2:4-dichloro-(Bülow and Huss), A., i, 314.
- Benzeneazopentamethylphenyl ether, and p-amino-, acetyl derivative (DIM-ROTH, LEICHTLIN, and FRIEDEMANN), A., i, 129.
- 4-Benzeneazo-m-phenetidine, and pnitro-, and their derivatives (Rever-DIN, RILLIET, and VERNET), A., i, 455.
- 4-Benzeneazophenol, 3:5:3':5'-tetrachloro- (WILLSTATTER and SCHUDEL), A., i, 400.
- Benzene-1:3-disulphonyl chloride, 4-chloro- (POLLAK, v. FIEDLER, and ROTH), A., i, 499.
- Benzene-1:3-dithiolacetic acid, 4-chloro-(POLLAK, v. FIEDLER, and ROTH), A., i, 499.
- Benzenehydrazobenzoic acid, 2':4'-dinitro-, methyl ester (GIUA), A., i, 552.
- Benzenesulphinic acid, 4-chloro-2nitro-, and its methyl ester (ZINCKE and BAEUMER), A., i, 538.
- Benzenesulphonamide, amino-, acetyl and chloroacetyl derivatives of (JACOBS and HEIDELBERGER), A., i, 69.
- Benzenesulphonic acid, preparation of (AYLSWORTH), A., i, 295.
- Benzenesulphonic acid, amino. See Anilinesulphonic acid.
- Benzenesulphonyl chloride, action of, with organic bases in ether solution (Schwarz and Dehn), A., i, 61.
- Benzenesulphonyl chloride, 4-chloro-3:5-dibromo- (Anschütz and Moll-NEUS), A., i, 424.
- Benzenesulphonylazide, o-cyano- (Schra-DER), A., i, 198.
- Benzene-1:3:5-trisulphonyl chloride, 2chloro- (Роцьак, v. Fiedler, and Roth), A., i, 499.
- Benzene-1:3:5-trithiolacetic acid, 2chloro- (Росьак, v. Fiedler, and Rотн), A., i, 500.
- Benzhydroxamatodiethylenediaminecobalt salts (Werner and Matissen), A., i, 379.
- Benzhydryl ether, action of sulphur on (SZPERL and WIERUSZ-KOWALSKI), A., i, 492.
- 2-Benzhydrylbenziminazole, 2-o-hydroxy-, and its picrate (BISTRZYCKI and SCHMUTZ), A., i, 452.
- 3-Benzhydryl-1-benzylideneindene (WÜEST), A., i, 489.
- 1-Benzhydryl-3-isobutylindane (WÜEST), A., i, 492.

- Benzhydrylisobutylindenes (WUEST), A., i, 491.
- 3-Benzhydryl- $\omega\omega$ -dimethylbenzfulvene (WÜEST), A., i, 491.
- 3-Benzhydryl-1-furfurylideneindene (WÜEST), A., i, 490.
- 3-Benzhydrylindene (THIELE and MERCK), A., i, 485.
- 3-Benzhydryl-ω-methyl-ω-ethylbenzfulvene (WÜEST), A., i, 491.
- 3-Benzhydryl-1-methylindene (WÜEST), A., i, 489.
- 2-Benzhydrylnaphthiminazole, 2-o-hydroxy- (BISTRZYCKI and SCHMUTZ), A., i, 453.
- 2-Benzhydrylperimidine, 2-o-hydroxy-(BISTRZYCKI and SCHMUTZ), A., i, 453:
- 3-Benzhydryl-1-isopropylindane (WUEST), A., i, 491.
- Benzil (dibenzoyl), and its oxime, association of, in benzene and alcohol (INNES), T., 430.
- Benzilic acid, ammonium salt (Mc-MASTER and WRIGHT), A., i, 263.
- "Benzimide," constitution of (SAVELS-BERG), A., i, 177.
- Benziminazole-2-propionic acid, and its salts and derivatives (MEYER and LÜDERS), A., i, 451.
- Benzoic acid, preparation of (Weston Chemical Co. and Savage), A., i,
 - heat of combustion of (SWIENTOS-LAWSKI), A., ii, 32.
 - solubility of, in ethyl acetate (LLOYD), A., ii, 221.
 - esterification of (FREAS and REID), A., ii, 160.
 - and p-hydroxy-, isolation of, from soils (WALTERS), A., i, 152.
 - separation and estimation of benzaldehyde and (GEIGER), A., ii, 463.
- Benzoic acid, calcium salt, hydrates and alcoholate of (STANBRIDGE), T., 808; A., i, 539.
 - mercuric salt, preparation of solutions of (Delepine), A., i, 539.
- Benzoic acid, β-diethylamino-α-phenylpropyl and β-ethylamino-α-phenylpropyl esters, preparation of (NAGAI) A. i. 500
 - (NAGAI), A., i, 500.

 \$-naphthyl ester, preparation of (Anthony-Hammond Chemical Works), A., i, 261.
- Benzoic acid, p-amino-, azide and hydrazide of, and their derivatives (Curtius and Jansen), A., i, 45.
 - diethylaminoethyl ester, and its hydrochloride (BADER and LEVIN-STEIN), A., i, 112.

Benzoic acid, hydroxy-derivatives, constitution of (WATERMAN), A., i, 154.

alkali salts, effect of heat on (MRAZEK), A., i, 71.

p-hydroxy-, ethyl ester, association of, in benzene (INNES), T., 434.

dihydroxy- and dinitro-derivatives, ammonium salts (McMaster and WRIGHT), A., i, 263.

o-nitro-, and its potassium salt, electrolysis of mixtures of (Schall), A., i, 389.

Benzoic anhydride, equilibrium of benzamide with (KREMANN and WENZING), A., ii, 72.

Benzoic anhydride, chloro-, iodo-, and nitro- (Adams, Wirth, and French), A., i, 165.

Benzoic oxalic anhydride, mono- and di-nitro-(ADAMS, WIRTH, FRENCH), A., i, 165.

B-Benzoicsulphinidoethylmethylaniline, derivatives (v. Braun, HEIDER, and MULLER), A., i, 270.

Benzoin oxalate (ADAMS, WIRTH, and FRENCH), A., i, 165.

2:6-dichloro-(Reich, Benzonitrile. SALZMANN, and KAWA), A., i, 15.

Benzophenone, formation of, by Friedel and Crafts' reaction (OLIVIER), A., i, 228.

association of, in benzene (INNES), T., 430.

Benzophenone, 4:4'-diamino-, and 3:3'dichloro-4:4'-diamino-, and their derivatives (FIERZ and KOECHLIN), A., i, 549.

3-nitro-4-hydroxy- (Borsche, Löwen-STEIN, and QUAST), A., i, 14.

Benzophenoneoxime, methyl ethers of, and their derivatives (SEMPER and LICHTENSTADT), A., i, 437.

γ-Benzopyrones, halogenated, preparation of (SIMONIS and SCHUHMANN), A., i, 26: p-Benzoquinone-4-imine, 2-amino-, salts

of (PICCARD and LARSEN), A., i, 396. 1-Benzoresinol, sodium salt (LIEB and

ZINKE), A., i, 502. 3:5-dinitro-

Benzisooxadiazole oxide, 3:5-dinitro-(GREEN and Rowe), T., 70; A., i, 127. Benzoxyamylanhydronorecgonine, ethyl

ester and its hydrochloride (CHEMISCHE WERKE GRENZACH), A., i, 122.

Benzoxypropylanhydrodihydronorecgonine, ethyl ester and its salts (CHEMISCHE WERKE GRENZACH), A., i, 122.

Benzoxypropylanhydronorecgonine, and p-amino-, and p-nitro-, ethyl esters and their salts (CHEMISCHE WERKE GRENZACH), A., i, 121.

Benzoylacetic acid, m-nitro- (Reich, AGAMIRIAN, KOEHLER, GAJKOWSKI, and Lubeck), A., i, 262.

2-Benzoyl-1-acetyl-3-o-hydroxyphenylcyclopropane-1-carboxylic acid, ethyl ester (WIDMAN), A., i, 348.

Benzoyl-p-aldehydophenylethylene oxide (Bodforss), A., i, 229.

3-Benzoyl-3:4-anisylidenecoumarin (WIDMAN), A., i, 393.

Benzoylation (Reverdin), A., i, 536. Benzoyl-3-bromo-4-methoxyphenyl-

ethylene oxide (Bodforss), A., i, 229.

Benzoyl-(?)-bromo-3:4-methylenedioxyphenylethylene oxide (Bodforss), A., i, 229.

Benzoyl-a-bromoisovalerylamide (PEREL-STEIN and BURGI), A., i, 166.

Benzoylearbamide, amino-, hydroxy-, and nitro-, and their derivatives (JACOBS and HEIDELBERGER), A., i,

o-Benzoyltetrachlorobenzoic acid, 3':5'dibromo-2':4'-dihydroxy-, and 2':4'dihydroxy-, and their derivatives (ORNDORFF and ADAMSON), A., i, 435.

Benzoyldiacetylfructoseacetone (Fisch-ER and NOTH), A., i, 227.

4-Benzoyl-3:5-diacetylgallic acid. 4-Benzoyloxy-3:5-diacetoxybenzoic acid.

a-Benzoyl-\$5-diphenylbutadiene dioxide (Bodforss), A., i, 230.

Benzoylethyl-p-phenylenediamine, and 2-chloro-(Farbenfabriken vorm. F. BAYER & Co.), A., i, 273.

Benzoylethyltolylene-2:5-diamine (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 273.

Benzoylethyl-p-xylylene-2:5-diamine (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 273.

Benzoylformic acid. See Phenylglyoxylic acid.

Benzoylfructose-acetone and -diacetone, and p-bromo- (FISCHER and NOTH). A., i, 227.

3-Benzoylgallic acid. See 3-Benzoyloxy-4:5-dihydroxybenzoic acid.

Benzoylglucose, and its phenylhydrazone (FISCHER and NOTH), A., i, 226.
Benzoylglucose-acetone and diacetone

(FISCHER and NOTH), A., i, 226.

γ-Benzoyl-α-o-hydroxyphenylpropane-\$8-dicarboxylic acid, a-hydroxy. (WIDMAN), A., i, 348.

2-Benzoyl-3-o-hydroxyphenylcyclopropane-1:1-dicarboxylic acid, methyl ethyl ester (WIDMAN), A., i, 348. 2-m-nitro-, ethyl ester (WIDMAN), A., i, 394.

- β-Benzoyl-α-4-methoxyphenylethylphosphonic acid, and its salts and oxime (t'ONANT), A., i, 75.
- 3-Benzoyl-2-methyl-1:4-benzopyranol and its anhydrohydrochloride (Chatterji and Ghosh), T., 446; A., i, 303.
- Benzoylmethyl-p-phenylenediamine (FARBEN FABRIKEN VORM. F. BAYER & Co.), A., i, 273.
- Benzoylmethyltolylene-2:4 diamine (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 273.
- Benzoyl-1:4-naphthaquinonediazide (Dimroth, Leichtlin, and Friede-Mann), A., i, 129.
- β-Benzoyl-β-m-nitrobenzylidenemethyl malonic acid, methyl ester (Kohler, Hill, and Bigelow), A., i, 74.
- β-Benzoyl-β-m-nitrobenzylidenepropionic acid (ΚοΗLER, ΗΙLL, and ΒΙGELOW), Α., i, 74.
- Benzoyl-3-nitro-4-methoxyphenylethylene oxide (Bodforss), A., i, 229.
- Benzoyl-o-nitrophenylethylene oxide (Bodforss), A., i, 229.
- Benzoyl-m-nitrophenylethylene oxide, derivatives of (Bodforss), A., i, 230.
- γ-Benzoyl-β-m-nitrophenylethylmalonic acid, esters of (Kohler, Hill, and Bigelow), A., i, 73.
- 3-Benzoyl-2-m-nitrophenylcyclopropane-1:1-diearboxylic acid, and its esters (Kohler, Hill, and Bigelow), A., i, 74.
- Benzoyl-m-nitrostyrylethylene oxide (Bodforss), A., i, 229.
- Benzoyloxyacetoxybenzoic acids, and their methyl esters (FISCHER, BERG-MANN, and LIPSCHITZ), A., i, 174, 175.
- 3-Benzoyloxy-4:5-carbonyldioxybenzoic acid (FISCHER, BERGMANN, and LIP-SCHITZ), A., i, 174.
- p-Benzoyloxycinnamic acid, 4'-aminoand 4'-nitro-, methyl esters (v. Konek and Pacsu), A., i, 394.
- 3-Benzoyloxy-4:5-diacetoxybenzoic acid, and its methyl esters (Fischer, Bergmann, and Lipschitz), A., i, 174.
- 4-Benzoyloxy-3:5-diacetoxybenzoic acid, and its methyl ester (FISCHER, BERG-MANN, and LIPSCHITZ), A., i, 174.
- 3-Benzoyloxy-4:5-dimethoxybenzoic acid, methyl ester (FISCHER, BERG-MANN, and LIPSCHITZ), A., i, 174.
- 3-Benzoyloxy-4-hydroxybenzoic acid, and its methyl ester (FISCHER, BERG-MANN, and LIPSCHITZ), A., i, 175.
- 3-Benzoyloxy-4:5-dinydroxybenzoic acid, and its methyl ester (FISCHER, BERGMANN, and LIPSCHITZ), A., i, 174.

- 3-Benzoyloxy-4-methoxybenzoic acid, methyl ester (Fischer, Bergmann, and Lipschitz), A., i, 175.
- 4-Benzoyloxy-3-methoxybenzoic acid, 5-amino-, and 5-nitro-, methyl esters (V. KONEK and PACSU), A., i, 395.
- 5-Benzoyloxy-1-β-naphthyl-4-benzyl-3methylpyrazole (v. Konek and Mit-Terhauser), A., i, 408.
- 1-Benzoyloxycyclopentane-1-carboxylic acid, amide and nitrile (ALOY and RABAUT), A., i, 224.
- a-Benzoyloxy-γ-phenyl-Δβ-butenoic acid, amide and nitrile (ALOY and RABAUT), A., i, 224.
- α-Benzoyloxy-p-isopropylphenylacetic acid, amide and nitrile (ALOY and RABAUT), A., i, 224.
- 3-Benzoyl-3:4-phenacylidenecoumarin (WIDMAN), A., i, 348.
- β-Benzoyl-γ-phenylbutyric acid, γ-bromo-β-p-bromo-, methyl ester (ΚοΗLER, HILL, and BIGELOW), A., i, 73.
- β-Benzoyl-γ-phenylbutyrolactone, β-pbromo- (Kohler, Hill, and Bigelow), A., i, 72.
- β-Benzoyl-γ-phenylisocrotonic acid, β-p-bromo (Kohler, Hill, and Bigelow), A., i, 73.
- Benzoylphenylethylene oxide, and its derivatives, action of light on (Bodforss), A., i, 232.
 - p-amino-, and its acetyl derivative (JÖRLANDER), A., i, 21.
- β-Benzoyl-γ-phenylethylmalonic acid, γ-bromo-β-p-bromo- (Kohler, Hill, and Bigelow), A., i, 73.
- γ-Benzoyl-β-phenylethylmalonic acid, γ-broino-, esters of (Kohler, Hill, and Bigelow), A., i, 72.
- β-Benzoyl-α-phenylethylphosphonic acid (CONANT), A., i, 75.
- Benzoylphenyl-p-phenylenediamine (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 273.
- 3-Benzoyl-2-phenylcyclopropane-1:1-dicarboxylic acid, 3-p-bromo-, and its methyl ester (Kohler, Hill, and Bigelow). A., i, 72.
- β-Benzoyl-γ-phenylvinylmalonic acid, β-p-bromo-, methyl ester (Kohler, Hill, and Bigelow). A., i, 73.
- β-Benzoylpropionic acid, β-p-bromo-(KOHLER, HILL, and BIGELOW), A., i, 73.
- α-Benzoylisosuccinic acid, ethyl ester (MEYER and LÜDERS), A., i, 451.
- Benzoyltyrosine, esters and hydrazides of, and their derivatives (CURTIUS and DONSELT), A., i, 46.

- Benzoylisovalerylamide (Perelstein and Bürgi), A., i, 166.
- 3:4-Benzphenanthrene, and its picrate (MAYER and OPPENHEIMER), A., i,
- 1:2:4-Benztriazine, 3-amino-, 3-bromo-, 3-chloro-, and 3-hydroxy-, and their derivatives (ARNDT and ROSENAU), A., i, 42.
 - 3-thiol-, and its derivatives (ARNDT and Rosenau), A., i, 41.
- Benzyl chloride, compound of dimethylzinc chloride (CHEMICAL WORKS, ROHNER & Co.), A., i, 260.
 - esters, pharmacological and therapeutic study of (Macht), A., i, 515.
- Benzyl alcohol, action of sulphur on (SZPERL and WIERUSZ-KOWALSKI), A., i, 492.
- Benzylamine stanni- and stannochlorides (DRUCE), T., 717; A., i,
- ethyl a-Benzylaminoglyoxylic acid, ester dichlorophenylhydrazone (Bü-Low and Huss), A., i, 43.
- Benzylbenzylideneamine, tribromide of (FRANZEN, WEGRZYN, and KRIT-SCHEWSKY), A., i, 11.
- 3-Benzyl-1 benzylideneindene, and di-chloro- (Bernthsen), A., i,
- Benzylcampholenic acid, and its derivatives (HALLER and LOUVRIER), A., i,
- d-Benzylcampholic acid, and its methyl ester and mono- and di-bromo- (RUPE and Blechschmidt), A., i, 223.
- 3-Benzyl-1-p-chlorobenzylideneindene (BERNTHSEN), A., i, 488.
- and 3-Benzyl-1-p-chlorobenzylindene p-chloro- (BERNTHSEN), A., i, 487, 488.
- 3-Benzyl-1-op-dichlorobenzylideneindene and chloro-, and dichlorohydroxy-(BERNTHSEN), A., i, 487.
- Benzyldimethylethyl alcohol (HALLER and BAUER), A., i, 428.
- and Louverer), A., i, 397. Benzylethylcampholamide
- Benzylideneacetophenone. See Phenyl styryl ketone.
- 2-Benzylideneaminoanthraquinone, (Scholl and Dischen-DORFER), A., i, 307.
- 1-Benzylideneamino-5-phenylhydantoin (BAILEY and PRITCHETT), A., 459.
- Benzylideneaniline, bromides (FRANZEN, WEGRZYN, and KRIT-SCHEWSKY), A., i, 11.

- Benzylideneaniline, 2'-chloro-3and -4-nitro- (MAYER and A., i, 37.
 - 2:4-dihydroxy- (SENIER and GAL-LAGHER), T., 33; A., i, 109.
- Benzylidenebenzaldehydecyanhydrinacetal, formation of (SAVELSBERG), A., i, 177.
- Benzylidenebromoanilines, 2:4-dihydroxy- (Senier and Gallagher), T., 34.
- Benzylidene-4-bromo-2-iodoaniline, VAUGHAN, nitronitro- (Dains, V. Janney), A., i, 340. and
- d-Benzylidenecampholic acid, and its esters (RUPE and BLECHSCHMIDT), A., i, 222.
- Benzylidenecamphor, preparation and derivatives of (RUPE and BLECHschmidt), А., i, 222.
- Benzylidenecamphylamine, $2:4\cdot di$ hydroxy (Senier and Gallagher), T., 35.
- Benzylidenecarbamylhydrazinophenylacetonitrile (BAILEY and PRITCHETT), A., i, 459.
- Benzylidenecollidine, and its salts (v. WALTHER and WEINHAGEN), A., i,
- α-Benzylidenehydrazinophenylacetic acid, and its derivatives (DARAPSKY). A., i, 553.
- Benzylidenehydrazinophenylacetonitrile, preparation and derivatives of (BAILEY and PRITCHETT), A., i, 458.
- 1-Benzylideneindene, mono- and dichloro- (BERNTHSEN), A., i, 486.
- 1-Benzylidene-3-methylindene (WÜEST), A., i, 489.
- Benzylidene- β -naphthylamine, 2:4-dihydroxy- (Senier and Gallagher),
- Benzylidene-a- and -\beta-naphthylamines, chloronitro- (MAYER and STEIN), A., i, 38.
- Benzylidenepæonolsulphonic and its ammonium salt (Pfeiffer and NEGREANU), A., i, 19.
- Benzylidene-p-phenylenediacetic acid, o-nitro- (Weitzenböck and Kling-LER), A., i, 494.
- 1-Benzylidene-3-isopropylindene (THIELE and MERCK), A., i, 485.
- Benzylidene-m-toluidine, 2:4-dihydroxy-(SENIER and GALLAGHER), T., 34.
- Benzylidene-p-toluidine, bromides (FRANZEN, WEGRZYN, SCHEWSKY), A., i, 11. and Krit-
- Benzylidene-p-toluidine, 2'-chloro-3nitro- (MAYER and STEIN), A., i, 37.

- Benzylidene-d-l-xylohexosamolactone hydrochloride (Levene), A., i, 531.
- 3-Benzylindene, mono- and di-chloro-(BERNTHSEN), A., i, 486.
- 3-Benzyl-2-methyl-1:4 benzopyrone, 7-hydroxy-, and its derivatives (CRABTREE and ROBINSON), T., 867.

1-Benzyl-3-p-methylbenzylindene, 1-p-chloro- (BERNTHSEN), A., i, 488.

- 1-Benzyl-2-methylindole (FARBWERKE VORM. MEISTER, LUCIUS, and BRUNING), A., i, 229.
- Benzylnicotinium salts, and nitro- (v. Walther and Weinhagen), A., i, 77.
- Benzylpicolinium salts, and nitro- (v. Walther and Weinhagen), A., i, 77.
- 3-Benzyl-1-p-isopropylbenzylideneindene (BERNTHSEN), A., i, 487.
- Benzylpyridinium salts, and nitro- (v. Walther and Weinhagen), A., i, 77.
- Benzylquinolinium salts, and nitro- (v. Walther and Weinhagen), A., i, 77.
- a- and \$\beta\$-Benzylthioglucosides, and their tetra-acetates (Schneider, Sepp., and Stiehler), A., i. 253.

3-Benzyl-1-tolylideneindene (BERNTH-SEN), A., i, 487.

- Benzyltrimethylsilicane p-sulphonic acid, and its salts and derivatives (Bygden), A., i, 134.
- 2-Benzyl-3(2':4'-xylyl)-quinoxaline (JORLANDER), A., i, 21.
- Berberidene (PERKIN), T., 761; A., i,
- Berberine, detection of, microchemically; in hydrastis powder (Ess), A., ii, 466.
- epiBerberine, and its salts (PERKIN), T., 492; A., i, 348.
- ψ-Berberinium iodide (PERKIN), T., 751.
- Betaine phosphotungstate (DRUMMOND), A., i, 337.
- Betulenes (SEMMLER, JONAS, and RICHTER), A., i, 301.
- Betulol, and its acetate (SEMMLER, JONAS, and RICHTER), A., i, 301.
- Betulyl chloride (SEMMLER, JONAS, and RICHTER), A., i, 301.
- Bile pigments, detection of, in serum (FOUCHET), A., ii, 415.
 Bilirubin (DE GRAAFF), A., i, 510.
- Binary systems, graphic representation of the properties of (Masing), A., ii, 389.
 - influence of substitution on equilibrium in (KREMANN and PETRITSCHEK), A., ii, 68, 69.

- Biological processes, influence of steric hindrance in (BAUDISCH and KLAUS), A., i, 53.
- Biological substances, estimation of total carbon in (RENAUD), A., ii, 407.
- Birds, occurrence of aluminium oxide and silicic acid in feathers of (Gon-NERMANN), A., i, 465.
 - polyneuritis in, and its prevention (Dutcher and Collatz), A., i, 561; (Sugiura), A., i, 562.
- Bis-4-acetyl-1-phenyl-5-methylpyrazolylazine (DAINS and HARGER), A., i, 239.
- Bis-α-bromoisovalerylsalicylamide. See isoValeroxybenzoyl-α-bromoisovalerylamide, α-bromo.
- 2:4-Bis-3':5'-dichlorobenzeneazophenol, 3:5-dichloro- (WILLSTÄTTER and SCHUDEL), A., i, 400.
- Bischofite, deposits of (Rózsa), A., ii, 80. Bisdiethylacetal, dithio-(Curtius and Kyriacou), A., i, 47.
- βγ-Bis[-3:4-methylenedioxyphenyl]-butanes, αδ-dinitro-, and their derivatives (Sonn and Schellenberg), A., i, 10.
- Bismuth alloys with antimony, electrolytic potential of (Bekier), A., ii, 425.
 - with lead and silver (Goto), A., ii, 365.
- Bismuth compounds, optical properties and constitution of (Schäfer and Hein), A., ii, 1.
- Bismuth oxychloride, solubility of, in hydrochloric acid (Noves, Hall, and Beattie), A., ii, 45.
 - hydroxide, solubility of, in water (ALMKVIST), A., ii, 320.
 - subnitrate, estimation of nitric acid in (Luce), A., ii, 273.
 - tellurides (AMADORI), A., ii, 366.
- Bismuth, estimation of, colorimetrically, in copper (Motherwell), A., 11, 136.
 - estimation of, electrolytically (Росн), A., ii, 373.
- Bismuth electrode. See Electrode.
- Bixin (Heiduschka and Panzer), A. i, 26.
- Blende, crystalline structure of (Beck-ENKAMP), A., ii, 9.
 - magnetic properties of (STUTZER, GROSS, and BORNEMANN), A., ii, 216
- Blood, viscosity of (TREVAN), A., i, 355. coagulation of (Mellanby), A., i, 87; (Clowes), A., i, 276.
 - pulmonary, tension of carbon dioxide and of oxygen in (FRIDERICIA), A., i, 275.

Blood, residual reducing power of (SCHUMM), A., i, 50.

effect of diaminoacridine sulphate on the toxicity of (Browning and GULBRANSEN), A., i, 282.

acetone substances in, in diabetes (Kennaway), A., i, 357.

amino-acids and dextrose in (HENDRIX and Sweet), A., i, 137.

carbon dioxide capacity of (HENDERson and HAGGARD), A., i, 201, 202. action of chlorates on (CAESAR), A., i,

cholesterol and its esters in (KNUDson), A., i, 136.

creatine and creatinine in (FEIGL), A., i, 357.

human, amount and distribution of creatine and creatinine in (HUNTER and Campbell), A., i, 137.

dextrose and cholesterol in (McCRUD-DEN and SARGENT), A., i, 275.

enzyme from the leucocytes of (Fies-SINGER and CLOGNE), A., i, 50.

gases of, influence of atropine and pilocarpine on (KELEMAN), A., i, 511.

phenols in (THEIS and BENEDICT), A., i, 558.

human, distribution of phosphoric acid in (Blook), A., i, 557.

sugar in (GUTMANN and ADLER), A., i, 50; (Ege), A., i, 356.

influence of morphine on sugar in (Ross), A., i, 356.

rate of dialysis of sugar in, in diabetes (KLEINER), A., i, 356.

Blood detection and estimation :-

analysis of (LEE), A., ii, 140. analysis of gases of (Henderson and SMITH), A., ii, 81; (VAN SLYKE), A., ii, 82.

and detection of acids in it (STRAUB and MEIER), A., ii,

detection and estimation of quinine in (RAMSDEN and LIPKIN), A., ii, 251.

estimation of acetoacetic acid, acetone and \$\beta\$-hydroxybutyric acid in (VAN SLYKE and FITZ), A., ii, 86.

estimation of the alkaline reserve of, electrometrically (McClendon), A.,

estimation of calcium in (HALVERSON and Bergeim), A., i, 50; (HALVER-SON, MOHLER, and BERGEIM), A., i, 51; (JANSEN), A., ii, 174.

estimation of carbon dioxide in (HENDERSON and PRINCE), A., i, 136; (Henderson and Morriss), A., ii, 506.

Blood detection and estimation: -

estimation of chlorine in (SIROT and

JORET), A., ii, 237. estimation of chlorides in (Dugar-DIN), A., ii, 172.

estimation of cholesterol in (KAST, Myers, and Wardell), A., ii, 245; (MYERS and WARDELL), A., ii, 461.

estimation of creatine and creatinine in (Feigl), A., i, 202; (Greenwald and McGuire), A., ii, 251; (Denis), A., ii, 414.

estimation of creatinine in (Chertкоv)**, А**., іі, 380.

estimation of dextrose in (BENEDICT), A., ii, 247; (Addis and Shevky), A., ii, 336, 337.

estimation of fatty acids in (CSONKA), A., i, 275.

estimation of iron in (BERMAN), A., ii, 371.

estimation of methyl groups attached in (Kossel nitrogen Edlbacher), A., i, 463.

estimation of nitrogen in (Donald; OKADA), A., ii, 127; (SJOLLEMA and Hesserschy), A., ii, 128.

estimation of non-protein nitrogen in (GREENWALD), A., ii, 239.

estimation of phenols in, colorimetrically (BENEDICT and THEIS), A., ii, 461.

estimation of phosphoric acid in (Bloor), A., ii, 452.

estimation of quinine in (HARTMANN and ZILA), A., i, 328.

estimation of sugar in, microchemically (EGE; BANG), A., ii, 278; (BANG and HATLEHOEL), A., ii, 279.

estimation of urea in (Peltrisor), A., ii, 414.

estimation of uric acid in (Tervaert), A., ii, 250; (Morris), A., ii, 251; (CURTMAN and LEHRMANN), A., ii, 464.

Blood-corpuscles, agglutination (RADSMA), A., i, 511.

white, physical properties of (TANGL and Bodon), A., i, 203.

Blood-plasma, proteins of (HERZFELD and KLINGER), A., i, 87.

estimation of chlorides in (RAPPLEYE), A., ii, 404.

Blood-serum, physical d-serum, physical properties (TANGL and BODON), A., i, 203.

action of carbon dioxide, acids and alkalis on (HAMBURGER; HASSEL-BALCH, and WARBURG), A., i, 320. pigments of (PATEIN), A., i, 558.

human, hæmatin in (Frigr; Frigr and DEUSSING), A., i, 241.

Blood-serum, human, phosphates (Feigl), A., i, 50, 203, 320, 357. phosphates in

estimation of calcium and magnesium in (MARRIOTT and HOWLAND), A.,

estimation of cholesterol in (BERNнапр), А., іі, 336.

estimation of residual nitrogen in (Fischer), A., ii, 452.

estimation of phosphates in (MAR-RIOTT and HAESSLER), A., ii, 20.

human, estimation of phosphorus in (Feigl), A., i, 50.

Blood-stains, detection of (PALET and FERNANDEZ), A., ii, 180.

Boiling points, determination of, apparatus for (EDWARDS), A., ii, 61. in capillary tubes (Emich), A., ii,

abnormal, causes of (Berthoud), A., ii, 388.

of the paraffins (LEBAS), A., ii, 292.

Boodt, Anselmus Boëtius de, life of (JAEGER), A., ii, 228.

Boric acid. See under Boron.

Borohydrates. See under Boron.

Boron in volcanic deposits (BRUN), A., ii, 323.

amorphous, and its nitride and phosphate (KROLL), A., ii, 109.

Boron compounds, manurial experiments with (Cook and Wilson), A., i, 332.

Boron:--

Boric acid, influence of hydroxy-acids on the conductivity of (Böeseken and KALSHOVEN; Böeseken, GOETTSCH, VAN LOON, VAN DER SPEK, and Weisfelt), A., ii,

influence of nitrogen derivatives on the electrical conductivity of (Böeseken, GOETTSCH, and STURM), A., ii, 146.

estimation of, by means of manna (ILES), A., ii, 407.

Borohydrates, constitution of (RAY), T., 807; A., ii, 440.

Borous acid, possible existence of, and its salts (RAY), T., 805; A., ii,

Boron organic compounds :--

Boric acid, salts of the catechol compound with (BÖESEKEN, OBREEN, and van Haeften), A., i, 219.

Boron, detection of, spectroscopically

(DE GRAMONT), A., ii, 173. detection of, with turmeric viscose silk fibres (CHAMOT and COLE), A., ii, 129.

12-Borotungstic acids (Rosenheim and JAENICKE), A., ii, 77.

Borous acid. See under Boron.

Brain, effect of toxic substances on the chemistry of (ABELOUS and SOULA), A., i, 88.

isoBrazilein, synthesis of salts of (CRAB-TREE and ROBINSON), T., 859.

Bread, digestibility of (BLAKE), A., i.

Bromates and Bromic acid. See under Bromine.

Bromine, atomic weight of (REIMAN; Murray), A., ii, 42.

electrical conductivity of solutions in (DARBY), A., ii, 145.

Hydrobromic acid, free energy of dilution of (LEWIS and STORCH), A., ii, 27.

gaseous, density of (REIMAN;

MURRAY), A., ii, 42. compounds of aromatic hydrocarbons with (MAASS and Rus-SELL), A., i, 534.

Bromides, estimation of, volumetrically (Vотосек), А., ії, 238.

estimation of, in presence of chlorides and iodides (WINKLER), A., ii, 237.

Bromic acid, detection and estimation of, in presence of hydrobromic. hydrochloric, and hydriodic acids (Purgotti), A., ii, 451.

Bromates, estimation of, in presence of hypobromites (RUPP), A., ii, 125.

Hypobromites, estimation of, in presence of bromates (RUPP), A., ii,

Bromine detection and estimation:detection and estimation of (CASARES

and TASTET), A., ii, 330. tection and estimation of, by magenta-sulphuric acid (Deniges and Chelle), A., ii, 203.

estimation of, volumetrically (Votočек), А., ii, 272.

estimation and distribution of, in animal organs (Autenrieth), A., ii, 238.

Bromine electrode. See Electrode.

Bronchial secretion, action of sugars on (Lo Monaco), A., i, 466.

Broom. See Sarothamnus scoparius.

Brucine, estimation of, colorimetrically, in presence of strychnine (WÖBER), A., ii, 339.

Buckwheat. See Fagopyrum fagopyrum.

Burette, device to improve the delivery of (Merritt), A., ii, 171.

Butinen-γ-ol (Hess and MunderLoh), A., i, 291.

Butter, detection of foreign fat in (STEWART), A., ii, 463.

Butter-fat, glycerides of (Amberger), A., i, 418.

estimation of fatty acids in (HOLLAND and BUCKLEY), A., ii, 250.

n-Butyl chloride, action of, with o- and p-toluidines (REILLY and HICKIN-BOTTOM), T., 974.

tert.-Butyl alcohol, trichloro-. See Chloretone.

isoButylamine phosphotungstate (DRUM-MOND), A., i, 336.

4-n-Butylaminoazobenzene-4'-sulphonic acid, sodium salt (Reilly and Hick-Inbottom), T., 111.

a-Butylaminoglyoxylic acids, ethyl ester dichlorophenylhydrazones (Bülow and Huss), A., i, 43.

n-Butylaniline, preparation and derivatives of (REILLY and HICKINBOTTOM), A., i, 10.

isoButyl-o- and -p-anisylhydrazides (WAHL), A., i, 237.

n-Butylarylamines (Reilly and Hickin-BOTTOM), T., 974, 985.

Butylbenzene, amino- (Reilly and Hickinbottom), T., 983.

Butyl diphenyl phosphite (MILOBENDZKI and SZULGIN), A., i, 495.

β-Butylhexane (LEVENE and CRETCHER), A., i, 251.

α-Butylhexoic acid, and its ethyl ester (LEVENE and CRETCHER), A., i, 250.

B-Butylhexyl iodide (Levene and Cretcher), A., i, 251.

3-Butylhexyl alcohol (Levene and Cretcher), A., i, 250.

B-Butylhexylmalonic acid, and its ethyl ester (LEVENE and CRETCHER), A., i, 251.

1-n-Butylindene (v. Braun), A., i, 111.

3-isoButylindene (Wüest), A., i, 491.

γ-Butyloctoic acid, and its ethyl ester (Levene and Cretcher), A., i, 251.

δ-Butyloctyl iodide (Levene and Cretcher), A., i, 251.

δ-Butyloctyl alcohol (Levene and CRETCHER), A., i, 251.

1:4-tert.-Butylphenol-3-sulphonic acid, and its sodium salt (Anschütz and Hodenius), A., i, 425.

tert.-Butylphenylene-3:4-sulphonylide (Anschütz and Hodenius), A., i, 425.

1-isoButylpiperidine hydriodide (Powell and Dehn), A., i, 124.

n-Butyl-p-toluidine, nitro-derivatives of (Reilly and Hickinbottom), T., 985.

n-Butyl-o- and -p-toluidines, and their salts and derivatives (Reilly and Hickinbottom), T., 978.

isoButylxanthic acid, potassium salt, reaction of ammonium molybdate with (DIAZ DE PLAZA), A., i, 249.

Butyramideglucoside, α-hydroxy-(Fischer and Anger), A., i, 526.

Butyric acid, oxidation of, with hydrogen peroxide (WITZEMANN), A., ii, 422.

ethyl ester, physical properties of (MATHEWS and FAVILLE), A., i, 153.

detection and estimation of (DENIGES), A., ii, 138.

estimation of, and its separation from acetic and propionic acids (Crow-ELL), A., ii, 137.

Butyric acid, halogen derivatives, relative stabilities of (Simpson), A., i, 250.

β-hydroxy-, estimation of, in urine and blood (VAN SLYKE; VAN SLYKE and FITZ), A., ii, 86.

3-Butyryl-p-cresol, 3-α-chloro- (v. Auwers and Müller), A., i, 29.

C.

Cabbage, fermentation of (Nelson and Beck), A., i, 364.

phytosterols in the seeds of, and in the fæces after feeding on it (ELLIS), A., i, 361.

Cacodylic acid, and thio-, uranyl salts (MÜLLER), A., i, 383.

Cadaverine. See Pentamethylenediamine.

Cadmium, allotropy of (COHEN), A., ii, 290.

spectrum of, in the inert gases (COLLIE and WATSON), A., ii, 383.

ionisation and resonance potentials of (TATE and FOOTE), A., ii, 94.

Cadmium bases (cadmiumammines), salts of, with organic acids (EPHRAIM and ROSENBERG), A., i, 390.

Cadmium iodide, equilibrium of, with free iodine (VAN NAME and BROWN), A., ii, 28.

selenide, formation of (CHIKASHIGE and HIKOSAKA), A., ii, 112.

Cadmium organic compounds:—dialkyls (KRAUSE), A., i, 157.

Cadmium detection, estimation and separation: —

detection of (AGRESTINI), A., ii, 455. estimation and separation of (CARNOT), A., ii, 133.

Cæsium chloride, double chlorides of (Vermande), A., ii, 397.

Cæsium, estimation of, in plant ash (Robinson), A., ii, 132.

Cæsium ions, effect of, on the action of the heart (ZWAARDEMAKER), A., i, 326.

Caffeine, action of, on muscle (Belák), A., i, 89.

Calabar bean, alkaloids of (Max and MICHEL POLONOVSKI), A., i, 504; (MAX Polonovski), A., i, 505.

Calcite, crystalline structure of (Becken-

KAMP), A., ii, 9. from North Burgess, Ontario (GRAнам), А., іі, 324.

Calcium, specific heat of (EASTMAN and Rodebush), A., ii, 149.

metabolism. See Metabolism.

Calcium arsenates (Robinson), A., ii,

borates, anhydrous, heat of formation of (GRIVEAU), A., ii, 258.

carbonates, basic (Donath and Lang), A., ii, 76.

chloride, compounds of carbamide with (Knoll & Co.), A., i, 528.

hydroxide, effect of passing acetone vapour over heated (FREUDENHEIM), A., i, 252.

oxide (lime), equilibrium of alumina, silica and (NEUMANN), A., ii,

effect of, on soils (HAGER), A., i,

Calcium organic compounds:-

cyanamide, estimation of dicyanodiamide in (KAPPEN), A., ii, 208. estimation of dicyanodiamide and urea in (Hene and VAN HAAREN), A., ii, 379.

estimation of nitrogen in (Tur-Kus), A., ii, 127.

morphinate (RAKSHIT), T., A., i, 350.

Calcium estimation: -

estimation of, volumetrically (GRoss-

FELD), A., ii, 83. estimation of, in blood (HALVERSON and BERGEIM), A., i, 50; (HAL-VERSON, MOHLER, and BERGEIM), A., i, 51; (JANSEN), A., ii, 174.

estimation of, in blood-serum (MAR-RIOTT and HOWLAND), A., ii, 21. Calorimeter, thermal leakage in (WHITE),

A., ii, 149. alloapo-Camphanecarboxylic acid.

a-Fenchenylanic acid.

Camphoceanaldehydic acid. See Aldehydocamphoceanic acid.

Camphonanic acid, isoamino-, methyl ester, action of nitrous acid on (Noves and SKINNER), A., i, 65.

cis-Camphonolic acid, salts and derivatives of (Noves and Skinner), A., i, 65.

Camphor, oximino-, decomposition of, on heating (SERNAGIOTTO), A., i, 117.

Camphoraldehydic acid. See Aldehydocamphoceanic acid.

Camphoranil (REDDELIEN), A., i, 117.

Camphoric acid semialdehyde. See Aldehydocamphoceanic acid.

Camphoroxime, association of, in benzene (Innes), T., 432.

a-Camphylaminoglyoxylic acid, ethyl ester dichlorophenylhydrazone (Bülow and Huss), A., i, 43.

Camwood, colouring matters of (O'NEILL and PERKIN), T., 125; A., i, 181. Cancer, effect of calcium and sodium

ions on growth of (CRAMER), A., i, 559.

Caoutchouc (india-rubber), diffusion of gases through (DEWAR), A., ii, 186.

vulcanisation of, without sulphur (Bunschoten), A., i, 503.

Carbamic acid, preparation of esters of (FARBENFABRIKEN VORM. F. BAYER & Co.; SYNTHETIC PATENTS Co.), A., i, 260.

p-benzylphenyl ester (FARBENFABRI-KEN VORM. F. BAYER & Co.; SYN-THETIC PATENTS Co.), A., i, 260.

Carbamide, synthesis of (WERNER and CARPENTER), T., 694; A., i, 528.

electrochemical synthesis of (Fichter), A., i, 215.

mechanism of the synthesis of, from urethane (WERNER), T., 622; A., i,

formation of, from amines in the animal organism (Löffler), A., i,

compounds of calcium chloride with (KNOLL & Co.), A., i, 528.

interaction of formaldehyde and (Dixon), T., 238; A., i, 255.

equilibrium of nitrobenzenes with (KREMANN and PETRITSCHEK), A., ii, 68.

decomposition of, on heating with acids and with alkalis (WERNER), T., 84; A., i, 103.

phosphotungstate (DRUMMOND), A., i, 337.

estimation of, in calcium cyanamide (HENE and VAN HAAREN), A., ii, 379.

See also Urea.

Carbamides, constitution of (WERNER), T., 84, 622; A., i, 103, 380; (Wer-NER and CARPENTER), T., 694; A., i, 528.

Carbamides, aromatic (JACOBS and Heidelberger), A., i, 68.

preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i,

Carbamides, thio. See Thiocarbamides. Carbamidobenzamides, and their derivatives (JACOBS and HEIDELBERGER), A., i, 70.

a-Carbamidoisobutylacetic acid, injection and excretion of (ROHDE), A., i,

a-Carbamidobutyric acid (West), A., i,

p(?)-Carbamidochloroacetylbenzylamine (JACOBS and Heidelberger), A., i, 71.

p-Carbamidophenoxyacetic acid, methyl ester and amide of, and their chloroacetyl derivatives (JACOBS and HEI-DELBERGER), A., i, 70.

Carbamidophenylacetamides, and their chloroacetyl derivatives (JACOBS and

HEIDELBERGER), A., i, 70.

p(?)-Carbamidophenyl chloromethyl ketone (Jacobs and Heidelberger), A., i, 71.

Carbamylhydrazinophenylacetic and its derivatives (DARAPSKY and Prabhakar), A., i, 507.

Carbazole, acyl derivatives of (Copisarow), T., 816; A., i, 548.

B-1-Carbethoxypiperidyl-2-propaldehyde (HESS and EICHEL), A., i, 34.

3-\$-Carbethoxyisopropyl-1-methylcyclopentane-1-carboxylic acid. See 3-Carboxy-3-methylcyclopentane-1-isobutyric acid.

Carbides, temperature of formation and stability range of (Ruff), A., ii, 314.

Carbohydrates, assimilation of, by plants (BOKORNY), A., i, 366.

action of symbiotic bacteria on (Por-TIER and BIERRY), A., i, 358. metabolism of. See Metabolism.

colour reactions of fluorene with (Gug-LIALMELLI and DELMON), A., i, 161.

o-Carbomethoxyanilinomethyl hyposulphite (BINZ, HUETER, and GOLDEN-ZWEIG), A., i, 5.

Carbon, atomic weight of (STAHRFOSS), A., ii, 312.

atomic heat of (WORTHING), A., ii, 217.

supposed fusion of (LA Rosa), A., ii, 362.

Carbon alloys with chromium (Ruff and FOEHR), A., ii, 399.

with iron (RUER and GOERENS), A., ii, 399.

tetrachloride, preparation of Carbon (Isco Chemical Co.), A., ii, 230. action of radium rays on (KAILAN), A., i, 209.

action of aniline with (HARTUNG),

T., 163; A., i, 237.

Carbon tetrachloride, use of, in analysis (Jannasch and Harwood), A., ii, 373.

monoxide, preparation of (BLOUNT), A., ii, 165.

reduction of sulphuric acid by (MIL-BAUER), A., ii, 360.

behaviour and detection of, in the "chlorate pipette" (HOFMANN), A., ii, 329.

dioxide, equilibrium in the system: ferrous carbonate, water (SMITH), A., ii, 261.

equilibrium in the system : zinc carbonate, water and (SMITH), A., ii, 261.

tension of, in alveolar air (JENNI), A., i, 462.

evolution of, from distilled water under pressure (Patten Mains), A., ii, 197.

dissolved, in distilled water, inof, in alkalimetry (Bruhns), A., ii, 453.

transport of, by solutions of sodium carbonate hydrogen (Buck-MASTER), A., i, 355.

reduction of, by hydrogen peroxide

(Wislicenus), A., i, 472. assimilation of (Willstätter and STOLL), A., i, 207; (WATERMAN), A., i, 518.

absorption of, by colloidal chlorophyll (WILLSTÄTTER and STOLL), A., i, 243.

respiratory regulation of the, in blood (HENDERSON and HAG-GARD), A., i, 201, 202.

amount of, in urine (DENIS and MINOT), A., i, 360.

detection of (STAFFORD), A., ii, 205.

Dittrich's estimation by of, method (v. Horvath), A., ii,

estimation of, gasometrically (MES-TREZAT), A., ii, 174.

alveolar, estimation of (YAMADA), A., i, 511.

estimation of, in blood (HENDERson and Prince), A., i, 136; (Henderson and Smith), A., ii,

estimation of, in carbonates (CHA-

PIN), A., ii, 370. estimation of, in plant respiration (GURJAR), A., ii, 82.

Carbonic acid, preparation of esters of (FARBENFABRIKEN BAYER & Co.), A., i, 260.

rate of hydrolysis of esters (SKRA-BAL), A., ii, 11.

Carbon :---

Carbonic acid, dithio-, ethyl and methyl hydrogen esters, rate of decomposition of (v. HALBAN and HECHT), A., ii, 222.

Carbonates, normal, and acid, estimation of (MESTREZAT), A., ii, 274. estimation of carbon dioxide in (Chapin), A., ii, 370.

Carbon disulphide, equilibrium of benzene and (Sameshima), A., ii, 429.

Carbon detection and estimation :-detection of, in steel, by the Eggertz test (Whiteley), A., ii, 130. estimation of, by the wet method

(STEPP), A., ii, 274.

Carbonation (PATTEN and MAINS), A., ii, 197.

Carbonic acid. See under Carbon. Carbonyl chloride, action of ammonia with (WERNER), T., 694; A., i, 528. N-Carbonylcarbazole (Copisarow), T.,

o-Carboxyanilinoacetonitrile (BINZ, HUETER, and GOLDENZWEIG), A., i, 6. o-Carboxyanilinomethyl α -hydroxybenzyl hyposulphite (BINZ, HUETER, and GOLDENZWEIG), A., i, 6.

a-Carboxy- β -p-bromobenzoyl- γ -phenylbutyrolactone (KOHLER, HILL, and BIGELOW), A., i, 73.

3-Carboxymethyl-1-methylcyclopentane-1-carboxylic acid. See Methylnorhomocamphoric acid.

3-Carboxy-3-methylcyclopentane-1-isobutyric acid (homofenchonic acid), and hydroxy-, and their ethyl esters (Ruzicka), A., i, 23.

3-Carboxy-3-methyl- Δ^5 -cyclopentene-1isobutyric acid (dehydrohomofenchonic acid), ethyl ester (Ruzicka), A., i, 23.

Carcinoma. See Cancer.

Carnosine, constitution and synthesis of (BAUMANN and INGVALDSEN), A., i, 454.

Carotin, occurrence of, in oils and plants (GILL), A., i, 476.

Carp, influence of oxygen tension on metabolism of (GAARDER), A., i, 512.

Carvone, isomerisation of, in light (SERNAGIOTTO), A., i, 444. conversion of, into pulegenic acid (WALLACH and V. RECHENBERG),

A., i, 429. Carvoneanil (REDDELIEN), A., i, 117. Carvonecamphor, constitution

(SERNAGIOTTO), A., i, 444. Casein, ionisation of (HAAS), A., i, 554.

hydrolysis of, in presence of starch (McHargue), A., ii, 280.

Casein, action of pancreatic enzymes on (SHERMAN and NEUN), A., i, 414.

Caseinogen, pure, preparation of (VAN SLYKE and BAKER), A., i, 413.

effect of heat on the digestibility of (HAMMARSTEN), A., i, 460.

action of pepsin and rennin on (HAMMARSTEN), A., i, 459. from human milk (Bosworth and

GIBLIN), A., i, 417. Catalase, preparation of, from bacteria

(Jacoby), A., i, 517.

Catalysis, history of (PRINS), A., ii, 13. studies in (LEWIS), T., 471; A., ii, 30, 263.

contact (BANCROFT), A., ii, 13, 40, 105; (ENGELDER), A., ii, 13.

effect of neutral salts on (HARNED), A., ii, 436. Catalysts, influence of foreign sub-

stances on the activity of (PAAL and HARTMANN), A., ii, 303, 357.

Catalytic hydrogenation by colloidal (PAAL and SCHWARZ), metals A., i, 343; (BÖESEKEN and HOF-

STEDE), A., ii, 73. reactions (WALTER), A., ii, 163. reduction of organic halogen com-

pounds (Rosenmund and Zетzесне), А., i, 339.

of aromatic compounds with platinum (WILLSTÄTTER and JAQUET), A., i, 391.

Catechol in the bark of trees (v. LIPP-MANN), A., i, 246.

compounds of cobaltsalts with (Weinland \mathbf{and} Döttinger), A., i, 298.

Catechol-boric acid, salts of (BÖESEKEN, OBREEN, and VAN HAEFTEN), A., i,

Celestite from Galicia (KREUTZ), A., ii,

Cell or Cells, electrochemical, potential of (FALES and VOSBURGH), A., ii, 424.

> lead standard (Henderson and STEGEMAN), A., ii, 54.

permanganate (WARRINGTON), A., ii, 97.

Cell or Cells, photochemical, containing complex cyanides (IIMORI), A., ii,

Cell or Cells, physiological, permeability of (Brooks), A., i, 471; (OSTER-

HOUT), A., i, 471, 472. penetration of, by acids (CROZIER), A., i, 279.

physical chemistry of the membranes of (Berczeller), A., i, 140.

living, diffusion of electrolytes through (LOEB), A., i, 51.

Cellulose, constitution of (SARASIN), A., i, 375.

structure and hydrolysis of (Cun-NINGHAM), T., 173; A., i, 214. distillation of, in a vacuum (PICTET

and Sarasin), A., i, 59.

esparto, constitution and reactions of (Cross and Bevan), T., 182; A., i, 214.

Portland, Cement, composition (NEUMANN), A., ii, 441.

Cephaeline, derivatives of (WALTERS.

BAKER, and Koch), A., i, 92. preparation of ethers of (FARBWERKE vorm. Meister, Lucius, and Brün-ING), A., i, 267.

Cereals, methylpentosans in (Oshima and Kondō), A., i, 419.

Ceric oxychloride (ARNOLD), A., ii, 314.

chloride, electrolysis Cerous (ARNOLD), A., ii, 314. hydroxide (DAMIENS), A., ii, 442.

Cerium organic compounds :-

Cerium salts obtained from drying oils (Morrell), T., 111; A., i, 98.

Cetorhinus maximus (basking-shark), constituents of oil of (Tsujimoto), A., i, 89.

Cevadine. See Veratrine.

Chalcedony mistaken for glockerite (WHERRY and GLENN), A., ii, 117. Chalkones. See Phenyl styryl ketones.

Chalmersite from Prince of Wales Sound, Alaska (Johnson), A., ii, 117.

Charcoal, absorption of gold chloride by (Koch), A., ii, 186.

Chart, triple parallel alignment, for the graphical interpolation of tabulated data (DEMING), A., ii, 41.

Chebulic acid, structure and reactions of (FISCHER and BERGMANN), A., i, **225.**

Chemical constitution and spectrochemistry of tautomeric compounds (v. Auwers), A., ii, 381.

and rotatory power of optically active compounds (CLOUGH), T., 526; A., ii, 255.

and colour (KEHRMANN), A., i, 311; (KEHRMANN and SANDOZ), A., ii, 418.

relation between physiological action and (PYMAN), A., i, 90. high reactions at temperatures

(LEWIS), A., ii, 30. Chemistry, pure and applied, future of (POPE), T., 289.

Chemistry, progress of, during the past hundred years (WELLS and FOOTE), **A**., ii, 307.

Chicory, degradation of inulin in the root of (GESLIN and WOLFF), A., i,

Chlorene (Dziewonski and Suknarowski), A., i, 296.

Chloretone (trichloro-tert.-butyl alcohol), detection of (ALDRICH), A., ii, 245.

Chlorine, action of light on mixtures of hydrogen and (PADOA and BUTI-

RONI), A., ii, 345. action of, on the alkali iodides (RAE), T., 880.

Hydrochloric acid, free energy of, in aqueous solution (Noves and ELLIS), A., ii, 27.

adsorption of, by hide-powder (Kubelka), A., ii, 390.

detection and estimation of small quantities of (Entat), A., ii,

detection and estimation of, in presence of bromic and iodic acids (Purgotti), A., ii, 451.

estimation of, gravimetrically, as ammonium chloride (VILLIERS), A., i, 332.

estimation of, in gastric juice (KELLING; DELORT and ROCHE), A., ii, 450.

Chlorides, estimation of, iodometrically (McCracken and Walsh). A., ii, 81.

estimation of, volumetrically (Колтногг), Α., ii, (Vотоčек), А., іі, 238.

of, in presence of estimation bromides and iodides (WINKLER), A., ii, 237.

estimation of, in blood (DUGARDIN), A., ii, 172.

estimation of, in blood plasma (RAPPLEYE), A., ii, 404.

Chlorates, estimation of, in presence of hypochlorites (RUPP), A., ii, 125; (Kolthoff), A., ii, 451.

estimation of, by Bunsen's method (Rupp), A., ii, 369.

Hypochlorous acid, action of mesityl oxide with (Slawiński), A., i,

esters of, action of sodium arsenite and of a mixture of potassium cyanide and hydrosulphide on (GUTMANN), A., i, 98.

Hypochlorites, stability of solutions of (Kolthoff), A., ii, 438.

estimation of, in presence of chlorates (Rupp), A., ii, 125; (Kolthoff), A., ii, 451.

Chlorine detection and estimation:detection of, in iodine (PINKHOF), A., ii, 172.

estimation of, volumetrically (Voroček), A., ii, 272.

estimation of, in presence of silicates (Bruhns), A., ii, 368.

estimation of, in rain and snow (PECK), A., i, 96.

estimation of, in gastric juice (GEORGES and FABRE), A., ii, 272.

estimation of, in gastric juice, blood, and milk (SIROT and JORET), A., ii,

estimation of, in urine (Votoček), A., ii, 330.

Chloroform, preparation of (UTHEIM), A., i, 521.

from ethyl alcohol (UKITA), A., i, 333.

action of ultra-violet light and of radium rays on (KAILAN), A., i, 206. Chlorohydrins, formation of (SMITH), A., i, 371.

Chlorophyll, colloidal, absorption of carbon dioxide by (WILLSTÄTTER and STOLL), A., i, 243.

Chlorotungstites. See under Tungsten. β-Cholestanol, derivatives of (Ellis and GARDNER), A., i, 343.

Cholesterol, nephelometric value (Csonka), A., ii, 277.

oxidation of, with nitric acid (WIN-DAUS), A., i, 500.

in animal organs (Lifschütz), A., i,

and its esters in blood (KNUDSON), A., i, 136.

amount of, in blood (McCruppen and SARGENT), A., i, 275.

in milk (DENIS and MINOT), A., i, 561.

estimation of (Lifschütz), A., ii, 179;

(Windaus), A., ii, 336. estimation of, in blood (KAST, MYERS,

and Wardell), A., ii, 245. estimation of, in blood serum (BERN-

напр), А., іі, 336. estimation of, colorimetrically, in blood (Myers and Wardell), A.,

ii, 461. Choline phosphotungstate (DRUMMOND), A., i, 337.

detection of, microchemically (SCHOORL), A., ii, 251.

d-Chondrosamic acid (Levene), A., i,

Chromic acid. See under Chromium. Chromithiocyanic acid, and its salts (SCAGLIARINI), A., i, 533.

Chromium, passivity of (ATEN), A., ii, 183, 290.

Chromium alloys, with carbon (RUFF and FOEHR), A., ii, 399.

Chromic acid, rate of solution of silver in (VAN NAME and HILL), A., ii, 104.

oxidation of organic compounds with (WINDAUS), A., ii, 22.

Chromates, estimation of, gravimetrically (Winkler), A., ii, 176.

Dichromates, estimation of, gravi-metrically (WINKLER), A., ii, 176.

Chromyl chloride, action of, on phosphorus haloids (FRY and Don-NELLY), A., ii, 167.

Chromium estimation :--

estimation of (Schorlemmer), A., ii,

estimation of, iodometrically, presence of iron and organic matter (Lauffmann), A., ii, 459.

estimation of, in presence of iron (Schorlemmer), A., ii, 372.

Chromium electrode. See Electrode. Chromones. See y-Benzopyrones.

Chromophores, saturation of (KAUFF-MANN), A., i, 112.

Chymosin. See Rennin.

Cinchona alkaloids (RABE and KINDLER), A., i, 303.

detection of (WHERRY and YANOVsky), A., ii, 339.

Cinchonic acids, synthesis of (KAUF-MANN), A., i, 187.

Cinchonine, isomerides and derivatives of (Léger), A., i, 182.

and its isomerides, action of hydrobromic acid on (Leger), A., i, 121.

action of hydriodic acid on (Leger). A., i, 232.

Cinchonine, a-hydroxy-, constitution of (Léger), A., i, 304.

Cinchoniretine (LEGER), A., i, 121.

α- and β-Cinenic acids, and their salts (RUPE and BLECHSCHMIDT), A., i,

Cineole as a cryoscopic solvent (FAWSITT and Fischer), A., ii, 257.

Cinnamic acid, association of, in benzene (INNES), T., 431. preparation of double acids from (DE

JONG), A., i, 432. Cinnamic acid, bromonitro- and chloronitro-derivatives, and their derivatives (REICH, AGAMIRIAN, KOEH-LER, GAJKOWSKI, and LUBECK), A., i, 262.

2:6-dichloro- (Reich, Salzmann, and KAWA), A., i, 15.

o-, m-, and p-nitro-, ammonium salts (McMaster and Wright), A., i, 263.

Cinnamoyl-a-bromoisovalerylamide, and (PERELSTEIN dibromide Bürgi), A., i, 166.

 β -Cinnamoyl- α -phenylethylphosphonic acid (CONANT), A., i, 75.

α-Cinnamoylisosuccinic acid, ethyl ester (MEYER and LÜDERS), A., i, 451.

Cinnamoylisovalerylamide and its dibromide (Perelstein and . Bürgi), A., i, 166.

Cinnamyldimethylamine, and its picrate (v. Braun and Köhler), A., i, 163. Cinnamylidene-p-anisidine (Senier and

GALLAGHER), T., 31. Cinnamylidenebromoanilines (SENIER

and Gallagher), T., 30.

Cinnamylidene-4-bromo-2-iodoaniline (Dains, Vaughan, and Janney), A., i, 340.

(SENIER Cinnamylidenechloroanilines and Gallagher), T., 30.

Cinnamylidenenitro- ψ -cumidine (Senier and Gallagher), T., 32.

Cinnamylidenenitrotoluidines (Senier and GALLAGHER), T., 31.

Cinnamylidene-p-phenetidine (Senier and Gallagher), T., 32.

Cinnamylidene-p-xylidine (SENIER and GALLAGHER), T., 32.

Cinnamyltrimethylammonium bromide (v. Braun and Köhler), A., i, 163.

Citral, hydrosulphonic derivatives of (ROMEO), A., i, 265.

estimation of (PARKER and HILTNER), A., ii, 377.

Citric acid in milk, effect of heat on, and its estimation (Sommer and HART), A., i, 465.

ammonium salt, preparation of solu-

tions of (SHUEY), A., ii, 20. ethyl esters, hydrolysis of (PINNOW), A., ii, 103, 394; (Meyer), A., ii, 223.

ethyl hydrogen esters, and their metallic salts (Wolfrum and Pinnow), A., i. 372.

detection of (BROEKSMIT), A., ii, 22. detection of, in urine (AMBERG and McClure), A., i, 141.

Citrus decumana (American grape-fruit), constituents of (ZOLLER), A., i, 332.

Coal, constitution of (STOPES and WHEELER), A., ii, 270.

oxidisable constituents of (GRAHAM and HILL), A., ii, 197.

oxidation and ignition of (WHEELER), T., 945.

Coal tar, pyridine bases from (ECKERT and Loria), A., i, 79.

Coal tar oil, dimethylnaphthalenes from (GESELLSCHAFT FÜR TEERVERWERT-UNG), A., i, 105.

Cobalt bases (cobaltammines) (WERNER and KARRER), A., ii, 318.

salts of, with organic acids (EPHRAIM and Rosenberg), A., i, 390.

Decamminedicobalt salts, dinitroso-(WERNER and KARRER), A., ii, 318.

Pentamminecobalt salts. nitroso-(WERNER and KARRER), A., ii, 318.

Cobalt potassium and sodium carbonates (APPLEBEY and LANE), T., 611; A., ii, 313.

hydroxide, solubility of, in water (ALMKVIST), A., ii, 320.

Cobalt organic compounds (WERNER), A., i, 375; (Werner and Matissen), A., i, 379.

with catechol (Weinland and Dör-TINGER), A., i, 298.

with diethylenediamine (JAEGER and Kahn), A., i, 8.

Cobalt-hexammine salts (EPHRAIM and ROSENBERG), A., ii, 116.

Diamminodinitro-oxalatocobalt salts (Shibata and Maruki), A., i, 99.

Cobalt estimation and separation:estimation of, colorimetrically (Jones), A., ii, 410.

estimation and separation of (CARnoт), A., ii, 133.

B-Cocaic acid, structure of (DE Jong), A., i, 172.

Cocaine, conversion of, into new physiologically active substances (v. Braun and MULLER), A., i, 233.

Cocaine alkaloids, preparation of derivatives of (CHEMISCHE WERKE GRENzacн), А., i, 121.

Codeine, potassium and sodium derivatives (RAKSHIT), T., 466; A., i, 350.

Colamine. See Ethyl alcohol, amino-. Colerainite (POITEVIN and GRAHAM), A., ii, 325.

Collodion membranes. See Membranes. Colloids, optical properties of (Lifschitz), A., ii, 181.

stability of (KRUYT), A., ii, 289.

diffusion of salts into (TADOKORO), A., ii, 432.

"soluble" and "insoluble" (HERZ-FELD and KLINGER), A., ii, 355.

absorption of water by (Henderson and COHN; FISCHER; HENDERson), A., i, 316.

swelling of, in cells, and its influence on the form of tissues (SPEK), A., i, 278.

chemistry of, in relation to the healing of wounds (v. GAZA), A., i, 514. Colloidal membranes. See Membranes.

Colloidal metals, catalytic hydrogenation by (PAAL and Schwarz), A., i, 343; (BÖESEKEN and HOFSTEDE), A., ii, 73.

particles, charge and dimensions of (v. Hevesy), A., ii, 52, 53.

determination of the charge on, by capillarity (Thomas and Garard), A., ii, 53.

solutions, anisotropic (REINDERS), A., ii, 101.

colour and dispersity of (BERCZEL-LER), A., ii, 100; (KIRCHHOF), A., ii, 300.

kinetics of the formation and flocculation of (Berczeller), A., ii,

osmosis and ultra-filtration of (Ost-WALD), A., ii, 391.

coagulation and attraction of partiin (ZSIGMONDY), A., ii, cles 101.

systems, time reactions in (Vorland-ER), A., ii, 301.

Colophony, colloidal nature of (PAUL), A., i, 25, 120.

Colorimeter, new (Bock and BENEDICT), A., ii, 367.

Colour and chemical constitution (KEHRmann), A., i, 311; (Kehrmann and Sandoz), A., ii, 418.

and dispersity of colloidal solutions (Berczeller), A., ii, 100; (Kirchног), А., іі, 300.

of inorganic compounds, in relation to their structure (v. Bichowsky), A., ii, 142.

Coloured solutions, volumetric analysis of (TINGLE), A., ii, 236.

Colouring matters, theories of the action of (KARRER), A., ii, 431.

formation of adsorption compounds by (HALLER), A., ii, 259.

adsorption of, and of bacteria (Bech-

HOLD), A., i, 516. jellies formed by (HALLER), A., ii,

therapeutic action of (BAUDISCH and

KLAUS), A., i, 53. development of colours on plant fibres after diazotisation of (AKTIEN Gesellschaft für Anilin-Fabri-KATION), A., i, 315.

of the second order (PICCARD, KHAR-ASCH. and FLECK), A., i, 385.

of dye-woods (O'NEILL and PERKIN), T., 125; A., i, 181.

yellowish-brown vat, preparation of (SYNTHETIC PATENTS Co.), A., i, 352.

See also :-Bilirubin. Colouring matters. See also :--

Hæmin.

Hæmoglobin.

Helicotuscin.

Helicorubin. Santalin.

Urobilinogen.

Columbium, line spectrum of (DE GRA-MONT), A., ii, 90.

Combustion of organic compounds (LE-VENE and BIEBER), A., ii, 130. fractional, of gases (BANCROFT), A.,

ii, 13. Conductivity water. See under Water.

Conhydrine, constitution of (HESS and Етенец), А., і, 34.

Convolvulin, biological action of (HEIN-RICH), А., i, 467.

Copper, deposition of an artificial patina on (Grotian), A., ii, 233.

Copper alloys with gold, resistance of, to chemical reagents (TAMMANN), A., ii, 445.

with gold and silver, resistance of, to chemical reagents (TAMMANN), A., ii, 447.

with nickel, potential of (Gordon and Sмітн), А., іі, 183.

with zinc, effect of small quantities of cadmium on (Guillet, A., ii,

Copper salts, transmission of oxygen by (Justin-Mueller), A., ii, 360.

Copper carbonates, basic (DUNNICLIFF and LAL), T., 718; A., ii, 398.

sodium carbonate (APPLEBEY and LANE), T., 610; A., ii, 313.

chloride, equilibrium of lithium chloride, water and (SCHREINEMAKERS and NOORDUYN), A., ii, 113. oxide, estimation of, in ores containing sulphur (MAIER), A., ii, 175.

sulphide. estimation of, in ores (MAIER), A., ii, 175.

Cupric bromide, ammoniacal compounds of mercury bromide and (ANDERLINI), A., ii, 44.

Cuprous chloride, action of sodium carbonate with, in solid form (PARK-ER), T., 405; A., ii, 222.

Copper organic compounds :-

dicyanodiamide, and its use in analysis (GROSSMANN and MANNHEIM), A., ii, 175.

Copper detection, estimation, and separation :-

detection of, in small quantities (SAUL and CRAWFORD), A., ii, 408.

detection of, with hæmatoxylin (RE-BELLO-ALVES and BENEDICENTI), A., ii, 276.

estimation of (MOIR), A., ii, 83.

Copper detection, estimation, and separation :--

estimation of, as oxide after precipitation as thiocyanate (FENNER and Forschmann), A., ii, 242.

estimation of, iodometrically (Kolt-

ногг), А., іі, 456.

estimation of, volumetrically (APPLE-BEY and LANE; BRUHNS), A., ii, 276.

estimation of, in presence of iron (LEY), A., ii, 21.

estimation of, gravimetrically, and its separation from mercury (Vотойек and PAZOUREK), A., ii, 455.

estimation of bismuth in (MOTHERwell), A., ii, 136.

estimation and separation of, from arsenic (CARNOT), A., ii, 133.

separation of molybdenum and (HOEPFNER and BINDER), A., ii,

Copper electrode. See under Electrode. Copper pyrites, crystal structure of (Bur-DICK and ELLIS), A., ii, 46.

Coprosterol, estimation of, in fæces (MYERS and WARDELL), A., ii, 461.

Cornuite (ROGERS), A., ii, 122. Corona discharge, chemical reactions in

the (Anderegg), A., ii, 42. Corpses, estimation of arsenic in (Füh-

NER), A., ii, 240.

Cotarnine, sodium derivative (RAKSHIT), T., 469; A., i, 350.

Cotton seed, toxic principle of (CAR-RUTH), A., i, 266; (WITHERS and CARRUTH), A., i, 327.

Cotton plant, chemistry of (VIEHOVER, CHERNOFF, and JOHNS; STANFORD and Vienover), A., i, 367.

Coumaranones, hydroxy-, preparation of, and their derivatives (SONN), A., i,

Coumarin, action of sunlight on (DE Jong), A., i, 303.

Coumarins, hydroxy, preparation (Sonn), A., i, 31.

Coumarin-3-carboxylic acid, methyl ester (WIDMAN), A., i, 348.

6)-carboxylic Coumarin-8(or acid, 4:5:7-trihydroxy-, ethyl ester, derivatives of (Sonn), A., i. 33.

Creatine, origin of HINES), A., i, 417. (BAUMANN and

formation and excretion of (THOMPson), A., i, 142.

(BAUMANN and INGoxidation of VALDSEN), A., i, 423.

in blood (FEIGL), A., i, 357.

amount and distribution of, in human blood (HUNTER and CAMPBELL), A., i, 137.

Creatine in muscle in degeneration HENDERSON, (Cathcart, PATON), A., i, 279.

excretion of, in ruminants (ORR), A., i, 561.

in urine, origin of (Rose, DIMMITT, and BARTLETT), A., i, 361.

estimation of, in blood (FEIGL), . A., i, 202; (GREENWALD and Mc-Guire), A., ii, 251; (Denis), A., ii, 414.

estimation of, colorimetrically, in blood (HUNTER and CAMPBELL), A., ii, 22.

Creatinine, effect of arginine on the secretion of (THOMPSON), A., i, 88. in blood (Feigl), A., i, 357.

amount and distribution of, in human blood (HUNTER and CAMPBELL), A., i, 137.

in urine, origin of (Rose, DIMMITT, and Bartlett), A., i, 361.

estimation of, in blood (FEIGL), A., i, 202; (GREENWALD and McGUIRE), A., ii, 251; (CHERTKOV), A., ii, 380; (DENIS), A., ii, 414.

estimation of, colorimetrically, in blood (HUNTER and CAMPBELL), A., ii, 22.

p-Cresol, 3-nitro-, action of sulphuric acid on (PAULY and WILL), A., i,

o-, m-, and p-Cresols, freezing points of mixtures of phenol and (Dawson and Mountford), T., 923.

freezing-point and boiling-point curves of mixtures of pheuol and (Fox and BARKER), A., i, 427.

compounds of pyridine with (SKIRROW and BINMORE), A., i, 547.

estimation of, in mixtures with phenol (Dawson and Mountford), T., 935. separation of (DARZENS), A., i, 260.

Cresylic acid, commercial, estimation of phenol in (Fox and BARKER), A., ii, 374.

Cristobalite, melting-point of (FERGUSON and Merwin), A., ii, 362.

Crops, action of sulphur on (SHEDD), A., i, 96.

Crotonaldehyde, formation of, from acetaldehyde (SABATIER and GAUDION). A., i, 251.

Crotonic acid, B-amino-, ethyl ester, action of ethyl oxalate on. in presence of potassium ethoxide (Wislicenus and Schöllkopf), A., i, 157.

Crowberry. See Empetrum nigrum. Cryoscopy, new apparatus for (Oddo), A., ii, 352.

Crystalloluminescence (Weiser), A., ii, 419.

Crystals, structure of, shown by soap bubbles (MARSHALL). A., ii, 37. complex, structure of (NIGGLI), A., ii,

action of light on (WEIGERT), A., ii, 344.

relation between the optical and geometric constants of (WHERRY), A., ii, 259.

formation of, in gels (Holmes), A., ii,

development of (MARCELIN), A., ii,

isomorphous mixtures of (GAUBERT), A., ii, 393.

liquid (Chaudhari), A., ii, 300.

double refraction and optical activity of (STUMPF), A., ii,

polymorphism of (GAUBERT), A., ii,

mixed, optical properties of (TAM-MANN), A., ii, 209.

Crystal-violet, synthesis of (KARRER), A., i, 40.

Cumene, αγ-dihydroxy-. See β-Phenyltrimethylene glycol.

See Phenylhydroxylamine, Cupferron. nitroso-, ammonium salt.

Cyanamide, preparation of (OSTERBERG and KENDALL), A., i, 104.

Cyanogen, free energy of formation of (Lewis and Keyes), A., ii, 153.

Cyanogen derivatives, fluorescence of (KAUFFMANN), A., i, 113.

reactions of (MACRI), A., i, 532. iodide, free energy of dissociation of (Lewis and Keves), A., ii, 153.

Hydrocyanic acid, free energy of formation of (LEWIS and BRIGHTON), A., ii, 153.

decomposition of solutions of (LEW-

cock), A., i, 382. toxic action of, on plants (Brench-LEY), A., i, 95.

sodium salt, hydrolysis of (WORLEY and Browne), A., i, 60.

detection and estimation of small quantities of (Kolthoff), A., ii, 138.

Cyanides, estimation of, volumetrically (Vотоčек), А., ii, 238.

estimation of the metal in, by means of sodium paratungstate (Kuzi-RIAN), A., ii, 82.

Cyanic acid, metallic salts, hydrolysis of (Werner), T., 84; A., i, 103. Cyanogen, estimation of, volumetrically

(Vотосек), А., ii, 272.

Cyanohydrins, action of, on bacteria and on enzymes (JACOBY), A., i, 363.

Cyanuric acid, preparation of, from uric acid (VENABLE and MOORE), A., i,

identity of tetracarbimide with (WAL-TERS and Wise), A., i 60.

Cyclic compounds, spectrochemistry of (v. Auwers), A., ii, 343. stability of (Böeseken, De Groot,

and CAMPAGNE), A., i, 338.

with bridged linkings, nomenclature of (Bredt and Savelsberg), A., i, 383. Cymene, action of aluminium chloride

with (Schorger), A., i, 61.

nitration of (Andrews), A., i, 339. detection of (SCHORGER), A., i, 257.

p-Cymenesulphonic acid, preparation of (RHEINISCHE CAMPHER FABRIK), A., i, 295.

Cytidine-phosphoric acid and its brucine salt (Levene), A., i, 130; (Thann-nauser and Dorfmüller), A., i, 317.

D.

Decacyclene (trinaphthylenebenzene), preparation of (Dziewonski and Suk-NAROWSKI), A., i, 296.

Decamminedicobalt salts. See under Cobalt.

Decanting (TILLISCH), A., ii, 368.

Dedimethylpiperidine. See Dimethylamino- Aa-pentene.

Dehydrobetulene (SEMMLER, Jonas, and RICHTER), A., i, 301.

Dehydrohomofenchonic acid. See 3 Carboxy-3-methyl-Δ⁵-cyclopentene-1-See 3isobutyric acid.

Dehydrohomonorcamphoric acid, methyl ethyl ester, and cyano-, ethyl ester (HINTIKKA and KOMPPA), A., i, 543.

Dehydromowric acid, hydroxy-, and nitro-, and their derivatives (SPIEGEL and MEYER), A., i, 302.

Density of molten substances, pyknometer for determining (v. AUWERS), A., ii, 342.

Deoxy-n- and -iso-santalin, and their acetyl derivatives (O'NEILL and PER-KIN), T., 130; A., i, 182.

Dextrose (d-glucose; grape-sugar), action of alkalis on (WATERMAN), A., i, 101, 154.

decomposition of, by Bacillus coli communis (GREY), A., i, 143, 144.

in lymph and blood (HENDRIX and

SWEET), A., i, 137. amount of, in blood (McCrudden and SARGENT), A., i, 275.

excretion of, after injection of glycine and its derivatives (GREENWALD), A., i, 513.

Dextrose (d-glucose; grape-sugar), estimation of, colorimetrically (ADDIS and SHEVKY), A., ii, 247, 336, 337.

estimation of, with sodium hypoiodite (WILLSTÄTTER and SCHUDEL), A., ii, 337.

estimation of, in blood (BENEDICT), A., ii, 247.

estimation of, in urine (GURTOV; MAYER), A., ii, 85; (FOLIN and McEllroy), A., ii, 207; (HUGENHOLTZ; BENEDICT and OSTERBERG), A., ii, 246.

estimation of, in urine, colorimetrically (ISAACSON), A., ii, 246.

estimation of, in urine, polarimetrically (Frenchs and Mannheim), A., ii, 246.

Diabetes (glycosuria), production of, by zinc salts (SALANT and WISE), A., i, 326.

rate of dialysis of the sugar in blood in (Kleiner), A., i, 356.

acetone substances in blood in (KEN-NAWAY), A., i, 357.

carbohydrate metabolism in (McGui-GAN), A., i, 358.

Diacetaldehyde, dithio-, di-p-nitrophenylhydrazone (Curtius and Kyriacou), A., i, 47.

3:5-Diacetoxy-4-hydroxybenzoic acid (FISCHER, BERGMANN, and LIP-SCHITZ), A., i, 173.

3:5-Diacetoxy-4-methoxybenzoic acid, methyl ester (Fischer, Bergmann, and Lipschitz), A., i, 173.

5:6-Diacetoxynaphthalene, bromohydroxy- and hydroxy- (WHEELER and EDWARDS), A., i, 76.

5:6-Diacetoxy-o-phenylenesulphonylide (Anschütz and Hodenius), A., i, 425.

Diacetyl. See Dimethyl diketone.

Diacetyl-4-chloro-2-nitrophenylthiol-methane (ZINCKE and BAEUMER), A., i, 538.

3:6-Diacetyl-2:6-dimethyl-4-aminomethylpyridine, anhydride of (Benary), A., i, 351.

3:5-Diacetyl-2:6-dimethyl-4-chloromethyl-1:4-dihydropyridine (BENARY), A., i, 351.

3:5-Diacetyl-2:6-dimethyl-4-chloromethylpyridine (BENARY), A., i, 351.

ylpyridine (BENARY), A., i, 351. 3:5-Diacetylgallic acid. See 3:5-Diacetoxy-4-hydroxybenzoic acid.

Diacetylphenylhydroxylamine (BAM-BERGER), A., i, 342.

Dialkyl phosphites, tautomerism and alkylation of (MILOBENDZKI and KNOLL), A., i, 522; (MILOBENDZKI), A., i, 523.

Dialkyl phosphites, action of water on (MILOBENDZKI and SACHNOWSKI), A., i. 478.

4-Diallylamino-1-phenyl-2:3-dimethyl-5-pyrazolone, preparation of (Society of Chemical Industry in Basle), A., i, 450.

Diallylbarbituric acid, compounds of morphine alkaloids with (Society of Chemical Industry in Basle), A.,

Diallylborneol (HALLER and LOUVRIER),

A., i, 397. Diallylcampholamide (HALLER and Lou-

VRIER), A., i, 397.

Diallylcamphor (HALLER and Lou-

VRIER) A., i, 397.

Dialysis, apparatus for (Thoms), A., ii,

preparation of collodion membranes for (FARMER), A., ii, 63.

Diamines, action of γ -lactones with (BISTRZYCKI and SCHMUTZ), A., i, 452.

Diamond, crystalline structure of (ADAMS), A., ii, 197.

Diamyl ether, e-chloro- (v. Braun and Köhler), A., i, 164.

Dianilinodichlorophthalanil (PRATT and PERKINS), A., i, 168.

3:9-Dianilinophenazoxonium hydrochloride, and its absorption spectra (Kehrmann and Sandoz), A., i, 126.

3:6-Dianilinophthalanil, 4:5-diehloro-(PRATT and PERKINS), A., i, 171.

Diantipyryl selenides (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 218; (V. KONEK and SCHLEIFER), A., i, 407.

1:1'-Dianthraquinonyl, 2:2'-diamino-(Scholl and Dischendorfer), A., i, 308.

Diastase, action of, on starch (Berczeller), A., i, 131.

effect of oxidising and reducing agents on the action of (BERCZELLER and FODOR), A., i, 132.

Diatomite from Madagascar (LACROIX), A., ii, 324.

 α-Diazo-β-p-hydroxyphenylpropionic acid, ethyl ester (Curtius and Don-SELT), A., i, 46.

Diazoimide ring, analogous behaviour of the diazomethane ring and (OLIVERI-MANDALA), A., i, 551.

Diazomethane, action of, on hæmin (Küster, Geering, and Kusch), A., i, 199.

Diazomethane ring, analogous behaviour of the diazoimide ring and (OLIVERI-MANDALA), A., i, 551.

- Diazonium compounds, mechanism of coupling reactions of (DIMROTH, LEICHTLIN, and FRIEDEMANN), A., i, 128.
- Dibenzaldehydesulphoxylic acid (BINZ), A., i, 291.
- 1:2:5:6-Dibenzanthracene, and its picrate (Weitzenböck and Klingler), A., i. 494.
- 1:2:5:6-Dibenzanthraquinone (Weitz-Enböck and Klingler), A., i, 494.
- 3:4:8:9-Dihenzopyrene, attempt to synthesise (Weitzenböck), A., i, 493.
- aβ-Dibenzoyl-α-acetylethane (Bon-FORSS), A., i, 229.
- Dibenzoylacetylfructoseacetone, and dip-bromo- (Fischer and Noth), A., i, 227.
- Dibenzoylacetylglucoseacetone (FISCH-ER and NOTH), A., i, 226.
- Dibenzoyleystine, esters and hydrazide of, and their derivatives (Currius and Kyriacou), A., i, 46.
- 3:5-Dibenzoyl-2:6-dimethyl-4-chloromethyl-1:4-dihydropyridine, and its nitro-derivative (Benary), A., i, 351.
- 1:2:4:3-Dibenzoylene-1:4:5:6-tetrahydropyrazine (BISTRZYCKI and SCHMUTZ), A., i, 454.
- Dibenzoylglucose (FISCHER and NOTH), A., i, 227.
- Dibenzoylmethane, 2:4:6:2':4':6'-hexahydroxy- (SONN), A., i, 31.
- and RABAUT), A., i, 224.
- Dibenzoyltri-p-bromobenzoylglucose (Fischer and North), A., i, 227.
- Dibenzoyltri-3:4:5-trimethoxybenzoylglucose, di-p-bromo- (FISCHER and BERGMANN), A., i, 225.
- 3:4:5:6-Dibenzphenanthrene (Weitzen-Böck and Klingler), A., i, 494.
- Dibenzyl. See s-Diphenylethane. Dibenzyl ether, action of sulphur on
- (SZPERL and WIERUSZ-KOWALSKI), A., i, 492. Dibenzylcampholamide (HALLER and
- LOUVEIER), A., i, 397.
- Dibenzyl-2:2'-dinaphthyl, and di-p-chloro- (Scholl and Tritsch), A., i, 484.
- Dibenzylidene-p-phenylenediacetic acid, di-o-amino-, and di-o-nitro- (Weitzen-BÖCK and KLINGLER), A., i, 494.
- Dibenzylketoxime, derivatives of (Ku-HARA, AGATSUMA, and ARAKI), A., i, 180.
- Dibenzylnicotinium salts (v. Walther and Weinhagen), A., i, 77.
- Di-n-butyl hydrogen phosphite (MILO-BENDZKI and SACHNOWSKI), A., i, 478.

- 4-Di-n-butylaminoazobenzene-4'-sulphonic acid, potassium and sodium salts (Reilly and Hickinbottom), T., 109.
- 4-Di-n-butylaminobenzeneazo-β-naphthol (REILLY and HICKINBOTTOM), T., 108.
- Di-n-butylaniline, and dinitroso-, and their salts (REILLY and HICKIN-BOTTOM), T., 99; A., i, 109.
- Dibutylmalonic acid, and its ethyl ester (Levene and Cretcher), A., i, 250.
- Di-n-butyl-p-toluidine, and its salts, and nitro-derivatives (Reilly and Hickin-BOTTOM), T., 980, 985.
- isoDicamphor, and its oximes and monoand di-bromo- (Guerbet), A., i, 347.
- Dichloroamine T. See Toluene-p-sulphodichloroamide.
- Dicinnamylidenebenzidine, preparation and properties of (SENIER and GALLA-GHER), T., 33.
- Dicinnamylidene-o-naphthylenediamine (SENIER and GALLAGHER), T., 33.
- Dicinnamylidene-p-phenylenediamine (SENIER and GALLAGHER), T., 32.
- Dicyanodiamide (cyanoguanidine), constitution of (HALE and VIBRANS), A., i, 380.
 - influence of, on growth of microorganisms (Moller), A., i, 469.
 - estimation of, in calcium cyanamide (Kappen), A., ii, 208; (Hene and Van Haaren), A., ii, 379.
- Didehydromowric acid (SPIEGEL and MEVER), A., i, 302.
- Di-p-diazo-m-tolylmethane chloride (STEBBINS), A., i, 354.
- Diet and nutrition (MENDEL and OSBORNE), A., i, 277; (OSBORNE MENDEL, FERRY, and WAKEMAN), A., i, 323.
 - relation of proteins in, to the production of milk (HART, HUMPHREY, and SMITH), A., i, 465.
 - analysis of, in production of pellagra (McCollum and Simmonds), A., i,
- Diethylacetylurethanes, bromo-, preparation of (Farbenfabriken vorm F. Bayer & Co.; Synthetic Patents Co.), A., i, 297.
- Diethylamine, preparation of (WERNER), T., 899.
 - stannochloride (DRUCE), T., 715; A., i, 535.
- p-Diethylaminobenzoic acid N-oxide, and its salts (BAUDISCH), A., i, 431.
- p'-Diethylaminobenzophenone, p-hydroxy- (Farbwerke vorm. Mrister, Lucius, and Brüning), A., i, 228.
- 4-Diethylamino-3-sulphobenzoic acid (BAUDISCH), A., i, 431.

Diethylaniline, \$\beta\$-bromo-, and its picrate (v. Braun, Heider, and Müller), A., i. 270.

Diethylcampholic acid, and its amide and potassium salt (HALLER and LOUVRIER), A., i, 397.

Di-2-ethylcarbonato-6-naphthyl disulphide (ZINCKE and DERESER), A., i, 221.

Diethylcyclopentamethylenestannine (GRÜTTNER, KRAUSE, aud WIERNIK), A., i, 135.

1:3-Diethylthiocarbonatobenzene, 4-chloro- (POLLAK, V. FIEDLER, and ROTH), A., i, 500.

2:4-Diethylthiocarbonato-1-ethylbenzene (Pollak, v. Fiedler, and Roth), A., i, 499.

2:4-Diethylthiocarbonato-m-xylene (Pollak and Schadler), A., i, 497.

Diffusion, principles of (Brown), T., 559; A., ii, 299.

in anisotropic liquids (SVEDBERG), A., ii, 187.

of electrolytes (Procopiu), A., ii, 156.

of gases through rubber (DEWAR), A., ii, 186.

rhythmic, in jellies (Moeller), A., ii, 301, 392; (Holmes), A., ii, 392.

Diformaldehydesulphoxylic acid. See
Methyl hyposulphite, hydroxy-.

1.3-Difurfurylideneindane (Wirst)

1:3-Difurfurylideneindane (Wüest), A., i, 491.

Di-2-furfurylmethylethylammonium bromide (v. Braun and Köhler), A., i, 163.

Digallic acid, synthesis of (FISCHER, BERGMAN, and LIPSCHITZ), A., i, 172. m-Digallic acid, methyl ester (FISCHER, BERGMANN, and LIPSCHITZ), A., i, 174.

Digitalis, glucosides of (MEYER), A., i, 367.

ψ-Digitoxine. See Gitaline.

Diglucosides, attempted synthesis of (BOURQUELOT and BRIDEL), A., i, 6. Dicyclohexylamine, hydrate and alcoholate of (FOUQUE), A., i, 164.

sulphates (Fouque), A., i, 106.

Dihippuryleystine, methyl ester, hydrazide and azide of, and their derivatives (Curtius and Kyrlacou),

A., i, 46.

Dihydroacridine, preparation of (SCHOLL and NEUBERGER), A., i, 505.

Dihydroanhydroberberine, and itsderivatives (Perkin), T., 737; A., i, 545. Dihydroanhydroepiberberine, and its salts and derivatives (Perkin), T.,

506; A., i, 349.

3:4-Dihydro-1:2-benzopyrone, iminohydroxy-derivatives (SONN), A., i, 32. Dihydrobutein trimethyl ether. See 4-Methoxyphenyl 3:4-dimethoxyphenylethyl ketone, 2-hydroxy-.

Dihydrodimethylisotetrahydroanhydroberberine, and its salts (PERKIN), T., 760; A., i, 546.

Dihydroecgonidine. ethyl ester, and its derivatives (v. Braun and Müller), A., i, 233.

Dihydroeserethole, and its zincochloride (Polonovski), A., i. 505.

Dihydroeseretholemethine, and its salts (Polonovski), A., i, 505.

Dihydroeserine, and its picrate (Polonovski), A., i, 505.

Dihydroeserinemethine, and its salts (Polonovski), A., i, 505.

Dihydroeseroline, and its salts (Polonovski), A., i, 505.

Dihydroeserolinemethine (Polonovski), A., i, 505.

Dihydroglyoxalines, dihydroxy-, preparation of (DIELS), A., i, 448.

2:3-Dihydroindole, 1-cyano- (v. Braun), A., i, 186.

2:3-Dihydroindole-2-carboxylic acid, 2:3-dihydroxy-, and its derivatives (Heller), A., i, 309.

2:3-Dihydroindole-2-glyoxylic acid, 2:3-dihydroxy-, ethyl ester (HELLER), A., i, 310.

Dihydromethylisotetrahydroanhydroberberine, and its salts (Perkin), T., 759; A., i. 546.

Dihydronorecgonidine, ethyl ester, and its salts (v. Braun and Müller), A., i, 234.

Dihydrophenazine, preparation of (Scholl and Neuberger), A., i, 505.

Dihydrophenonaphthacridonequinone and its acetyl derivative (LESNIAŃ-SKI), A., i, 405.

Dischenderer), A., i, 308.

Dihydroquinacridine (Lesnianski), A., i, 406.

Dihydroquinoline-2-carboxylic acid, hydroxy- (HELLER), A., i, 310.

Dihydroricinine (Böttcher), A., i, 305. Dihydroricininic acid, and its silver salt and methyl ester (Böttcher), A., i, 305.

Dihydroshogaol (Nomura), A., i, 447. 3:3-Diketo-1-phenylpiperazine, attempts to prepare (Dubsky and Gränacher), A., i, 188.

Diketopiperazines (Dubsky and GRÄNACHER), A., i, 188, 189.

3:5-Diketopiperazine-1-acetanilide, and its salts (Dubsky and Gränacher), A., i, 189.

- 2:5-Diketopiperazine-1:4-diacetanilide (Dubsky and Gränacher), A., i, 188.
- 3:5-Diketopiperazine-1-op-dinitroacetanilide (Dubsky and Gränacher), A., i, 189.
- 2:6-Dimethoxy-4 allylphenol (MAUTH-NER), A., i, 428.
- 3:4-Dimethoxybenzoic acid, 5- and 6amino-, 6-nitro-5-amino-, and 6-nitro-, and their derivatives (SIMONSEN and RAU), T., 24; A., i, 116.
- 3:4-Dimethoxybenzoylmethyl alcohol (p-veratroylcarbinol) (KAUFMANN and MÜLLER), A., i, 178.
- 2:4-Dimethoxybenzoylphenylethylene oxide (Jörlander), A., i, 21.
- 2:3-Dimethoxybenzylalcohol (o-veratryl alcohol), and its salts (KAUFMANN and MÜLLER), A., i, 178.
- 2:3 Dimethoxybenzyl-\(\beta\)-3:4-methylenedioxyphenylethylamine. See o-Veratrylhomopiperonylamine.
- 4:7-Dimethoxycoumarin (SONN), A., i, 32.
- 3:4-Dimethoxydeoxybenzoin, and its bromide (KAUFMANN and MÜLLER), A., i, 178.
- 2:4-Dimethoxydibenzoylmethane (Rob-INSON and TURNER), T., 876.
- 5:7-Dimethoxy-3:4-dihydro-1:2-benzopyrone, 4-imino- (SONN), A., i. 32.
- pyrone, 4-imino- (Sonn), A., i, 32. 2:2'- and 4:4'-Dimethoxydi-3-m-methylstyryl ketone, 5:5'-dimitro- (Simon-SEN), T., 778; A., i, 542.
- an-Dimethoxyheptane, δ-chloro- (HAMO-NET), A., i, 421.
- 2:4-Dimethoxy-1-methylcoumarone (v. Auwers and Müller), A., i, 30.
- a-4:5-Dimethoxy-2:3-methylenedioxyphenylethyl alcohol (FABINYI and SZEKI), A., i, 18.
- a-4:5-Dimethoxy-2:3-methylenedioxyphenylpropyl alcohol (FABINYI and SZEKI), A., i, 18.
- 2:6-Dimethoxyphenyl allyl ether (MAUTHNER), A., i, 428.
- **3:4-Dimethoxyphenylacetonitrile.** See *p*-Homoveratronitrile.
- 3:4-Dimethoxyphenyl benzyl ketone. See 3:4-Dimethoxydeoxybenzoin.
- 3:4-Dimethoxy-β-phenylpropionic acid, 6-bromo- (CRABTREE and ROBINSON), Τ., 871.
- 3:4-Dimethoxyphenyl a-p-toluenesulphonylmethylaminobenzyl ketone (KAUF-MANN and MÜLLER), A., i, 179.
- 5:6-Dimethoxy-o-toluic acid, preparation of (Perkin), T., 762.
- 3-Dimethylamino-9-anilinophenazoxonium, 9-hydrochloride, and its absorption spectra (Kehrmann and Sandoz), A., i, 126.

- p-Dimethylaminobenzaldehyde, action of nitrous acid on (KLAUS and BAUDISCH), A., i, 430.
- 4-Dimethylaminobenzoic acid, methyl ester, action of nitrous acid on (Klaus and Baudisch), A., i, 430.
- 4.Dimethylaminobenzoic acid, 3-amino-, aud its hydrochloride (BAUDISCH), A., i, 431.
- p-Dimethylaminobenzoic acid N-oxide, and its salts (BAUDISCH). A., i, 431.
- p-Dimethylaminobenzophenone-p'-sulphonic acid (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 228.
- 2-Dimethylamino-p-benzoquinone-4imine, salts of (PICCARD and LARSEN), A., i, 396.
- 4. Dimethylamino-4':4"-diacetylaminotriphenylmethyl chloride (FIERZ and KOECHLIN), A., i, 550.
- 4-Dimethylamino-2:3- and -2:5-dimethylbenzyl alcohols, and their derivatives (v. Braun, Arkuszewski, and Köhler), A., i, 258.
- o- and m-Dimethylaminohydrindenes, and their derivatives (v. Braun, Arkuszewski, and Köhler), A., i, 259.
- 5-Dimethylamino-6-hydroxymethylhydrindene, and its derivatives (v. Braun, Arkuszewski, and Köhler), A., i, 259.
- p'-Dimethylamino-o'-methylbenzophenone, p-amino- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 998
- 2:6-Dimethyl-4-aminomethylpyridine-3:5-dicarboxylic acid, ethyl hydrogen ester, lactam and lactamic acid of (Benary), A., i, 351.
- Dimethylamino-\Delta pentene, preparation of, and attempts to prepare ring compounds from it (VALEUR and Luce), A., i, 337.
 - action of methylene iodide with (VALEUR and LUCE), A., i, 102.
- p. Dimethylaminophenyl. 1. chloro-8naphthyl sulphide (ZINCKE and EIS-MAYER), A., i, 387.
- α- and β-Dimethylaminopropionic acids, esters and hydrazides of, and their derivatives (Currius and Colosser), A., i, 45.
- Dimethylaminosuccinic acid, methyl ester and hydrazide of, and their derivatives (Curtius and Colosser), A., i, 45.
- 4-Dimethylamino-3-sulphobenzoic acid (BAUDISCH), A., i, 431.
- Dimethylamyloxyamylamine (v. Braun and Köhler), A., i, 164.

- Dimethylaniline, catalytic preparation of (MAILHE and DE GODON), A., i, 217.
 - compound of benzyl chloride, zinc chloride and (CHEMICAL WORKS, ROHNER & Co.), A., i, 260.
- Dimethylaniline, chloronitro- and nitrohydroxy-derivatives (Borsche, Löwenstein, and Quast), A., i, 14.
- Dimethylanthranilic acid, azide and hydrazide of, and their derivatives (Curtius and Colosser), A., i, 45.
- 1:1-Dimethylarsepedine, salts of (ZAPPI and LANDABURU), A., i, 510.
- Dimethylbenzfulvene picrate (THIELE and MERCK), A., i, 484.
- 4:4'-Dimethylbenzophenone. See Di-p-tolyl ketone.
- 2:3-Dimethyl- γ -benzopyrone, bromoand chloro-derivatives (Simonis and Schuhmann), A., i, 26.
- 2:3-Dimethyl-y-benzothiopyrone, 6-chloro- (Simonis and Schuhmann), A., i, 27.
- 2:4- and 3:4-Dimethylbenzoylphenylethylene oxides, and their diacetates (Jörlander), A., i, 20.
- α- and β-Dimethylcamphols (HALLER and BAUER), A., i, 24.
- Dimethylcampholamide (HALLER and BAUER), A., i, 24.
- Dimethylcampholic acid (HALLER and BAUER), A., i, 24.
- Dimethylcamphor (HALLER and BAUER), A., i, 24.
- Dimethyl-ε-chloroamylamine, salts of (v. Braun and Köhler), A., i, 164.
- 2:6-Dimethyl-4-chloromethyl-1:4-dihydropyridine-3:5-dicarboxylic acid, ethyl ester, preparation of, and its derivatives (Benary), A., i, 350.
- 2:6-Dimethylcinchomeronic acid. See 2:6-Dimethylpyridine-3:4-dicarboxylic acid.
- 1:4-Dimethylcoumaran-2-one, 1-hydroxy-, phenylhydrazones (v. Auwers), A., i, 194.
- 2:6-Dimethyl-4-cyanomethylpyridine-3 5-dicarboxylic acid, ethyl ester (BENARY), A., i, 351.
- Dimethyldi-\$\beta\$-bromoethyldiaminodiphenylmethane (v. Braun, Heider, and Müller), A., i, 259.
- Dimethyldi-\(\textit{\beta}\)-caloroethyldiaminodiphenylmethane, and its picrate (v. Braun, Heider, and Müller), A., i, 270.
- Dimethyldicyanomethyl-3-methylbenzidine (v. Braun and Mintz), A., i, 127.
- Dimethyldicyanomethyl-o-tolidine (v. Braun and Mintz), A., i, 127.

- 3:7-Dimethyl-1:9-diethyluric acid, and its glycol dimethyl ether, crystalline form of (BILTZ and MAX), A., i, 455
- Dimethyldihydroisoindylium bromide and chloride (v. Braun and Köhler), A., i, 186.
- 4:6-Dimethyl-1:2-dihydropyrimidine, 2imino-, and 2-imino-1-cyano- (HALE and VIBRANS), A., i, 381.
- 1:2-Dimethyl-1:2-dihydroquinoline picrate, isomeric changes of (Heller), A., i, 306.
- Dimethyl diketone (diacetyl), influence of boric acid on the conductivity of (BÖESEKEN and OSTENDE), A., ii, 146.
- oxime of, condensation of aldehydes with (DIELS), A., i, 448.
- 1:1'-Dimethyl-2:2'-dinaphthyl (Scholl and Tritsch), A., i, 484.
- s-Di(-3:4-methylenedioxyphenyl)-suceinic acid, and its salts (Sonn and Schellenberg), A., i, 10.
- Dimethylglyoxime, manufacture of (ADAMS and KAMM), A., i, 482.
- βδ-Dimethyl-Δβζ-heptadien·δ-ol, preparation of (Enklaar), A., i, 154.
- 1:3-Dimethylcyclohexan-5-one, bromoderivatives (WALLACH, GERHARDT, and JESSEN), A., i, 443.
- 2:6-Dimethyl-4-hydroxymethylpyridine-3:5-dicarboxylic acid, lactone of (Benary), A., i, 351.
- ωω-Dimethyl-3-α-hydroxyisopropylbenzfulvene (Thiele and Merck), A., ii, 484.
- Dimethyliodomethyl-δ-iodoamylammonium iodide reduction of (VALEUR and Luce), A., i, 102, 155.
- Dimethyliodomethyl- Dy pentenylammonium iodide, reduction of (VALEUR and Luce), A., i, 155.
- Dimethyliodomethyl-Δ⁸-pentenylammonium iodide, and its reduction products (VALEUR and LUCE), A., i, 102.
- 5:7-Dimethylisatin, isomerides of, and their salts and derivatives (Heller and Baumgarten), A., i, 235.
- 5:7-Dimethylisatoic acid. See 3:5-Dimethylphenylglyoxylic acid, 2-amino.
- Dimethyl-3-methylbenzidine, and dievano-, and dinitroso- (v. Braun and Mintz), A., i, 127.
- Dimethylnaphthalenes, extraction of, from coal-tar oil, and their derivatives (GESELLSCHAFT FÜR TEERVERWERTUNG), A., i, 105.
- Dimethyl-a-naphthaquinones (GESELL-SCHAFT FÜR TEERVERWERTUNG), A., i, 106.

- Dimethylolcarbamide, preparation of (Dixon), T., 247; A., i, 255.
- 3:8-Dimethyloxindole, 5- and 7-hydroxy-, and their derivatives (WAHL), A., i, 237.
- Dimethyleyelopentamethylenestannine (GRÜTTNER, KRAUSE, and WIERNIK), A., i, 135.
- 1:3-Dimethylcyclopentane-4-carboxylic acid, 4-hydroxy- (Wallach, Gerhardt, and Jessen), A., i, 444.
- 1:3-Dimethylcyclopentan-4-one, and its semicarbazone (WALLACH, GERHARDT, and JESSEN), A., i, 444.
- 3:5-Dimethylphenylglyoxylic acid, 2amino-, and its salts (MARTINET), A., i, 345.
- 2:6-Dimethylpyridine, synthesis (Mumm and Hüneke), A., i, 183.
- 2:6-Dimethylpyridine-3:4-dicarboxylic acid, and its salts and derivatives (Mumm and Hüneke), A., i, 183.
- 2:4-Dimethylpyridine-3:5-dicarboxylic acid, 6-amino-, and 6-hydroxy- (Kirpal and Reimann), A., i, 78.
- 2:4-Dimethylpyridine-3:5:6-tricarboxylic acid, imide and esters of (Kirpal and Reimann), A., i, 78.
- 2:4-Dimethylthiocarbonato-1 ethylbenzene (POLLAK, v. FIEDLER, and ROTH), A., i, 499.
- 2:4-Dimethylthiol-1 ethylbenzene, and 5-nitro- (POLLAK, v. FIEDLER, and ROTH), A., i, 499.
- 2:6-Dimethyl-4-thiolmethylpyridine-3:5-dicarboxylic acid, ethyl hydrogen ester, thiolactone and thiolactonic acid from (Benary), A., i, 351.
- from (Benary), A., i, 351.

 Dimethylthiol-m- and -p-xylene, and their derivatives (Pollak and Schadler), A., i, 497.
- Dimethyl-2-p-xylidine, and its salts (v. Braun, Arkuszewski, and Köhler), A., i, 259.
- Di-B-naphthol 6-disulphide (ZINCKE and DERESER), A., i, 221.
- Dinaphthyl oxide. di-1-chloro-di-β-thio-(ZINCKE and EISMAYER), A., i, 386.
 - disulphide, di-1-chloro- (ZINCKE and EISMAYER), A., i, 386.
 - sulphoxide, di-1-chloro-. See Dinaphthyl oxide, di-1-chloro-di-β-thio-. disulphoxide, di-1-chloro- (ZINCKE
- and EISMAYER), A., i, 386.

 Di-8-naphthyldithiolimine, di-1-chloro(ZINCKE and EISMAYER), A., i, 386.
- 2:2'-Dinaphthylene-1:1'-diacetic acid (Weitzenböck), A., i, 493.
- 2:2'-Dinaphthylene-1:1'-diacetonitrile (Weitzenböck), A., i, 493.

- 2:4-Di-β-naphthylthio-α-naphthylamine, di-1'-chloro-. See Naphthyl 2:4-di-1'-chloro-β-naphthyl disulphide, 1amino-.
- Dioxalomalonic acid, ethyl ester, constitution of (v. Auwers and Auffenberg), A., i, 479.
- 2:4-Dioxy-3-phenylthiazole, synthesis of (Andreasch), A., i, 80.
- 2:4-Dioxythiazole, synthesis of (ANDRE-ASCH), A., i, 80.
- 2:8-Dioxy-1:7:9-trimethyl-1:2:8:9-tetrahydropurine, physiological action of (SALANT and CONNET), A., i, 242.
- Diphenyl phosphite, and its ferric chloride derivative (MILOBENDZKI and SZULGIN), A., i, 495.
 - sulphide, 4-chloro-2-nitro-4'-hydroxy-(ZINCKE and BAEUMER), A., i, 538.
 - disulphide, 4:4'-dichloro-2 2'-dinitro-(ZINCKE and BAEUMER), A., i, 537.
 - disulphoxide, 4:4'-dichloro-2:2'-dinitro- (ZINCKE and BAEUMER), A., i, 538.
- Diphenyl-5-acetoxy-o-tolylcarbinol (GOMBERG and JOHNSON), A., i, 111.
- N-Diphenylacetylethylenediamine, N-ohydroxy- (BISTRZYCKI and SCHMUTZ), A., i, 454.
- Diphenylamine, 3-amino-6-hydroxy-, dihydrochloride (Piccard and Lar-SEN), A., i, 396.
 - 4:6-dinitro-3-hydroxy- (Borsche, Löwenstein, and Quast), A., i, 14.
- Diphenylamine sulphuric acid, use of, in the estimation of nitric acid (TILL-MANS), A., ii, 128.
- p-Diphenylarsyltriethylsilylbenzene, and its derivatives (GRÜTTNER and KRAUSE), A., i, 133.
- Diphenylbenzoquinonemonoimineoxime chloride. See Triphenylamine, p-nitroso-, hydrochloride.
- Diphenyl-5-benzoyloxy-o-tolylcarbinol (Gomberg and Johnson), A., i, 111.
- ωω-Diphenyl-3-benzylbenzfulvene (WÜEST), A., i, 489.
- Diphenylbenzylenebenziminazole, di-phydroxy-, and its derivatives (BISTRZYCKI and SCHMUTZ), A., i, 452.
- Diphenyl-4:6-dibromo-5-hydroxy-otolylcarbinol (Gomberg and Johnson), A., i, 112.
- Diphenyl 2:6 dibromo 3 methylquinomethane (Gomberg and Johnson), A., i, 112.

βγ-Diphenylbutane, αδ-dinitro-, and its derivatives (Sonn and Schellenberg), A., i, 9.

ωω-Diphenyl-3-isobutylbenzfulvene (WÜEST), A., i, 491.

Diphenylcarbinol, action of sulphur on (SZPERL and WIERUSZ-KOWALSKI), A., i, 492.

Diphenylcarbinol, 2:6-dichloro-, and its acetate (REICH, SALZMANN, and KAWA), A., i, 15.

Diphenyl-4:6-dichloro-5-hydroxy-otolylcarbinol (Gomberg and Johnson), A., i, 112.

8γ-Diphenylcrotonic acid, α-bromo-γhydroxy-, γ-hydroxy-, and α-iodo-γhydroxy- (Bougault), A., i, 17.

5:6-Diphenyl-2:3-di-op-dichlorophenyl-1:2:3:4-tetrahydro-1:2:3:4-tetrazine (Bülow and Huss), A., i, 315.

Diphenyldiethyltetramethylenediamine, and its picrate (v. Braun, Heider, and Müller), A., i, 270.

δδ-Diphenyl-ββ-dimethyl-n-butane, αγδtrihydroxy- (Kohn and Neustädter), A., i, 477.

s-Diphenyldimethylethylenediamine, dinitroso-, and its hydrochloride (v. Braun, Heider, and Müller), A., i, 406.

Diphenyldimethyltetramethylenediamine, and its derivatives (v. Braun, Heider, and Müller), A., i, 108.

Heider, and Müller), A., i, 108.

Diphenyldithiolamine, 4:4'-dichloro-2:2'-dinitro-(Zincke and Barumer), A., i. 538.

4:4'-Diphenylenebis 4-benzyl-3-methyl-5-pyrazolone (v. Konek and Mitter-HAUSER), A., i, 408.

s-Diphenylethane (dibenzyl), action of sulphur on (Szperl and Wierusz-Kowalski), A., i, 492.

Diphenyl-5-ethylcarbonato-o-tolylcarbinol, and its derivatives (Gomberg and Johnson), A., i, 111.

aa-Diphenylguanidine (ARNDT and ROSENAU), A., i, 40.

aß-Diphenylguanidine, o-nitro- (ARNDT and ROSENAU), A., i, 41.

Diphenyl-5-hydroxy-o-tolylcarbinol, and its derivatives (Gomberg and Johnson), A., i, 111.

Diphenylketoxime, derivatives of (KU-HARA, AGATSUMA, and ARAKI), A., i,

Diphenylmethane, absorption spectra of (MASSOL and FAUCON), A., ii, 210. and fluorene, action of sulphur on (SZPERL and WIERUSZ-KOWALSKI), A., i, 492.

ωω-Diphenyl-3-p-methoxybenzylbenzfulvene (Wüest), A., i, 490. ωω-Diphenyl-3-methylbenzfulvene, and its picrate (Wüest), A., i, 489.

Diphenyl-5-methylcarbonato-o-tolyl-carbinol (Gomberg and Johnson), A., i, 111.

NN'-Diphenyl-N-methyl-N'-ethylethylenediamine, and its picrate, and dibromo-, and dinitroso- (v. Braun, Heider, and Müller), A., i, 406.

1:5-Diphenyl-3-methylpyrazole, 1-op-dichloro- (Bülow and Huss), A., i,

Diphenyl-3-methylquinomethane (Gom-BERG and JOHNSON), A., i, 1111.

ωω-Diphenyl-3-isopropylbenzfulvene (WÜEST), A., i, 491.

r-Diphenylsuccinanilic acid (WREN and WILLIAMS), T., 837.

Diphenylsuccinic acids, and their esters, optically active (WREN), T., 210; A., i, 264.

interconversion of esters of (WREN and STILL), A., i, 17.

r-Diphenylsuccinic acid, salts and derivatives of (WREN and WILLIAMS), T., 834.

r-Diphenylsuccinic anhydride, action of alcohols and amines on (WREN and WILLIAMS), T., 832.

Diphenylsuccino-p-tolil (WREN and WILLIAMS), T., 839.

meso- and r-Diphenylsuccino-p-toluidic acid, and silver salt and methyl ester of the latter (WREN and WILLIAMS), T., 838.

Diphenylthienylcarbinol (Thomas and Couderc), A., i, 504.

Diphenylthiocarbamide, 4-bromo-2-iodo-(Dains, Vaughan, and Janney), A. i, 340.

o-nitro- (ARNDT and ROSENAU), A., i,

Diphtheria bacilli. See Bacilli.

2:4-Dipicrylthiol-1-ethylbenzene, and its derivatives (Pollak, v. Fiedler, and Roth), A., i, 499.

Dipicrylthiol-m- and -p-xylene (Pollak and Schadler), A., i, 497.

Dipiperonylpiperazine salts (KAUFMANN and DÜRST), A., i, 123.

Disaccharides, constitution of (HAWORTH and LEITCH), T., 188; A., i, 213. synthesis of (WREDE), A., i, 6.

Disiloxane, and hexachloro- (STOCK, SOMIESKI, and WINTGEN), A., ii, 110.

Disinfection, theories of (LEE and GIL-BERT), A., ii, 262. by alcohols (CHRISTIANSEN). A., i.

by alcohols (CHRISTIANSEN), A., i, 564.

Dispersion, Drude's theory of (SOMMER-FELD), A., ii, 89.

Dispersion, rotatory, anomalous (GROSS-MANN and WRESCHNER), A., ii, 92. and colour of colloidal solutions (Berczeller), A., ii, 100; (KIRCHног), А., іі, 300.

Dispersoids, charge, conductivity, and dimensions of (v. HEVESY), A., ii, 51,

Dissociation, vapour pressure during (WEGSCHEIDER), A., ii, 298. of hydrocarbons (MEYER and Hor-

MANN), A., i, 383.

Dissociation constants of acids of the oxalic acid series and their esters (Palomaa), A., ii, 435.

of a-oximino-acids (Hicks), T., 554; A., i, 338.

apparatus (Noyes Distillation SKINNER), A., ii, 30; (Coombs), A., ii, 227; (Friedemann), A., ii, 429.

steam (HARRIES and HAARMANN), A., ii, 296.

for the preparation of pure acids (KRUMMENACHER), A., ii, 438.

Distyryl-4:4'-benzene, dinitro-a:a'-dicyano- (KAUFFMANN and JEUTTER), A., i, 114.

Distyryl ketone, p-chloro- (STRAUS and BLANKENHORN), A., i, 501.

 \mathbf{Di} -ar-tetrahydro- β -naphthylcarbamide (SCHROETER and THOMAS), A., i, 418. s-1:1-Ditetrahydroquinolylethane Braun, Heider, and Muller), A., i,

Dithienylmethylmethane, possible formation of (FEARON), A., ii, 462.

Di-o-tolyldimethylethylenediamine, and its salts (v. Braun, Heider, and Müller), A., i, 271.

Di-p-tolyl ketone, preparation of, and its condensation with phenol (Gom-BERG and TODD), A., i, 74.

Di-m-tolylmethane, di-p-amino- (STEB-BINS), A., i, 353.

Dogs with ligatured carotids, digestion of proteins of meat by (ZUNZ), A., i,

Doremol, and its derivatives (SEMMLER, Jonas, and Roenisch), A., i, 119.

Doremone, and its derivatives (SEMM-LER, JONAS, and ROENISCH), A, i, 119.

Dropping-point apparatus for analysis of fats and waxes (DUPRÉ), A., ii, 376.

Drop-weight apparatus, glass tips for (DAVIES), A., ii, 228.

Drugs, microchemistry of (MAYRHOFER), A., ii, 465.

extracted from plants, manganese in (WESTMAN and ROWAT), A., i, 246. Drugs, detection of purine bases in (Tunmann), A., ii, 465.

Dyeing, theory of (KRUYT and VAN DER MADE), A., ii, 153.

Dypnopinacone, and its derivatives, constitution of (Delacre), A., i, 538.

Dysprosium, separation, purification and atomic weight of (KREMERS and BALKE), A., ii, 200; (KREMERS, HOPKINS, and ENGLE), A., ii, 201.

E.

Earths, rare (JORDAN and HOPKINS), A., ii, 44; (KREMERS and BALKE), A., ii, 200; KREMERS, HOPKINS, and Engle), A., ii, 201; (YNTEMA and Hopkins), A., ii, 398.

position of, in the periodic system (VOCEL), A., ii, 226.

electrolysis of solutions of salts of (DENNIS and RAY), A., ii, 76.

of the cerium group, carbides of (DA. MIENS), A., ii, 442.

separation of, from iron (Wöber), A., ii, 243.

Ebullioscopy, determinations of, with an ordinary thermometer (KIPLING-ER), A., ii, 294.

Eccaine, and its salts (v. Braun and Müller), A., i, 234.

Eggs of Fundulus, diffusion of electrolytes through (LOEB), A., i, 51.

Egg-albumin. See Albumin.

a- and β-Elæostearic acids, cerous and lead salts (MORRELL), T., 117; A., i, 98.

methyl esters, stereoisomeric (Mor-RELL), A., i, 372.

Elaidic acid, cerous salt (MORRELL), T., 117; A., i, 98.

Elaphomyces hirtus, constituents of (Issogliò), A., i, 476.

Electric charge on colloidal particles and on ions (v. Hevesy), A., ii, 51; (THOMAS and GARARD), A., ii, 53.

produced by spraying antipyretics (ZWAARDEMAKER and ZEEHUISEN), A., ii, 351.

discharge through hydrocarbon gases (WRIGHT), T., 79; A., ii, 51.

furnace for micro-analyses (Dubsky), A., ii, 130.

Electrical conductivity, determination of (Newberry), T., 701; A., ii, 387. and the periodic system of elements (GRÜNEISEN), A., ii, 287.

zero concentration values of (KEN-

DALL), A., ii, 182. of acids and bases (GHOSH), T., 790; A., ii, 423.

Electrical conductivity of dispersoids (v. Hevesy), A., ii, 53.

electrolytes in dilute solution (WASHBURN), A., ii, 55, 56; (WEI-LAND), A., ii, 56.

of strong electrolytes (Gноян), Т., 449; А., ii, 215.

of electrolytes in bromine (DARBY), A., ii, 145.

of non-aqueous solutions (GHOSH), T., 627; A., ii, 348.

of a-hydroxy-acids and their racemates, influence of boric acid on (Böeseken and van der Ent), A., ii, 147.

of metals (Grüneisen), A., ii, 287; (Wereide), A., ii, 288.

of pure metals (BECKMAN), A., ii, 7. of salt vapours (SCHMIDT), A., ii,

recorder of, for measurement of salinity of solutions (WEIBEL Thuras), A., ii, 368.

Electrical double refraction in liquids (Bergholm), A., ii, 6, 209.

Electrical osmosis (BRIGGS, BENNETT, and Pierson), A., ii, 214.

Electricity, thermodynamic theory of production of (Beutner; Baur), A., ii, 214.

Electrode, bismuth-bismuth oxychloride, potential of (Noves and Chow), A., ii, 214.

bromine, potential of (LEWIS and STORCH), A., ii, 27.

chromium, potential of (ATEN), A., ii,

copper-cuprous chloride, potential of (Noves and Chow), A., ii, 214.

hydrogen, potential of (Lewis, BRIGHTON, and SEBASTIAN), A., ii, 25.

new vessel for (McClendon), A., ii, 83.

lead, potential of (HENDERSON and STEGEMAN), A., ii, 54; (GETMAN), A., ii, 184.

mercurous chloride (calomel), potential of (Lewis, BRIGHTON, and SEBASTIAN), A., ii, 25.

mercury, use of, in alternating current electrolysis (WEISER), A., ii,

metallic, occlusion of hydrogen and oxygen by (HARDING and SMITH), A., ii, 424.

oxygen, potential of (GRUBE and DULK), A., ii, 348.

zinc, potential of (BANCROFT), A., ii,

Electrolysis and photolysis (BAUR), A., ii, 284.

Electrolysis, alternating current, use of mercury electrodes in (WEISER), A., ii, 148.

substitutes for platinum in apparatus for (NICOLARDOT and BOUDET), A., ii, 425.

Electrolytes, electrical conductivity of, in dilute solution (WASHBURN), A., ii, 55, 56; (Weiland), A., ii, 56.

electrical conductivity of, in bromine (Darby), A., ii, 145.

electromotive force and ionisation of (LINHART), A., ii, 28.

ionisation of (MILNER), A., ii, 54,

potential produced by the flow of, through capillary tubes (KRUYT), A., ii, 289.

kinetics of reactions with (WEG-SCHEIDER), A., ii, 349.

solubility and dissociation of, in ethylurethane (STUCKGOLD), A., ii, 99.

diffusion of (PROCOPIU), A., ii, 156. through living cells (LOEB), A., i, 51.

strong, electrical conductivity (GHOSH), T., 449; A., ii, 215. abnormality of (GHOSH), T., 627, 707; A., ii, 348, 392. adsorption of, by proteins (J. A. and

W. H. WILSON), A., ii, 260.

Electrolytic dissociation, chemistry of (HANTZSCH), A., ii, 299.

in solvents with low dielectric constants (PLOTNIKOV), A., ii, 183.

potential in relation to the periodic system (Thomlinson), A., ii, 183. Electromotive force and ionisation of

electrolytes (LINHART), A., ii, 28. Electronic frequency, relation between atomic number and (ALLEN), A., ii, 15.

theory of metals (WEREIDE), A., ii, 288.

Electro-osmosis, measurement of the rate of (GLIXELLI), A., ii, 426.

Elements, history and etymology of (Наски), А., іі, 396.

tables of atomic and combining weights of (Paneth), A., ii, 305.

arrangement of, in order of their atomic weights (SZYMANOWITZ), A., ii, 436; (LORING), A., ii, 437.

periodic system of (Wells), A., ii, 190; (Steinmetz), A., ii, 225; (Meyer), A., ii, 263; (Hackh), A., ii, 306.

genesis of, and their periodic arrangement (SCHMIDT), A., ii, 305.

electrical conductivity of, with reference to the periodic system (GRÜ-NEISEN), A., ii, 287.

Elements, relation between the electrolytic potential of, and their position in the periodic system (THOMLINson), A., ii, 183. atomic and molecular numbers of (ALLEN), T., 389; A., ii, 191, 220. specific heat of (MILLS), A., ii, 7. values of b and \sqrt{a} in the equation of state for various (VAN LAAR), A., entropy of, with reference to the third law of thermodynamics (Lewis and Gibson), A., ii, 29, chemical, conception of (FAJANS), A., ii, 224. definition of the term (Weg-SCHEIDER; PANETH), A., ii, 304. isotopic, in relation to estimates of geologic time (Shelton), A., ii, 14. separation of, by means of fractional diffusion (LACHS, NADRATOWSKA, and WERTENSTEIN), A., ii, 213. radioactive. See Radioactive elements. n- and iso-Elemicin, synthesis of (MAU-THNER), A., i, 428. Elemol, constitution and derivatives of (SEMMLER and LIAO), A., i, 25. isoEmetine, and its salts (PYMAN), T., 226; A., i, 267. Empetrum nigrum (crowberry), phytochemistry of (VAN İTALLIE), A., i, 419. Emulsions, stability of, in constricted tubes (HALL), A., ii, 10. water-in-oil (Schlaepfer), T., 522; A., ii, 260. Entropy in relation to the third law of thermodynamics (Lewis and Gibson), A., ii, 29. of metals (ALLEN), A., ii, 292. Enzyme, Schardinger's, functions of (Woker and Maggi), A., i, 48. Enzymes, formation of (Jacoby), A., i, 54, 132, 328, 469; (V. EULER), A., chemistry of (v. Euler), A., i, 414. chemical composition and formation of (v. Euler and Svanberg), A., i, 517. in serum, formation of, after injection of sucrose (Röhmann), A., i, 138. surface tension of solutions of (Berc-ZELLER), A., i, 131. action of cyanohydrins on (JACOBY), A., i, 363. pancreatic, action of, on casein (SHER-MAN and NEUN), A., i, 414. of yeast (Ivanov), A., i, 365.

Enzymes. See also: — Amylase.

Arginase. Catalase.

Enzymes. See also :--Diastase. Erepsin. Invertase. Lichenase. Lipase. Lipoidase. Maltase. Oöcytase. Pepsin. Peroxydase. Ptyalin. Raffinase. Rennin. Sucrase. Urease. Enzyme action (HULTON-FRANKEL), A., i, 132; (BAYLISS), A., i, 461. influence of salts on (FALK), A., i, effect of potassium bromate on (FALK and Winslow), A., i, 274. Eosin, tetraiodo-, and its derivatives (PRATT and COLEMAN), A., i, 176. Epiboulangerite from Montana (SHAN-NON), A., ii, 116. Epichitosamic acid (LEVENE), A., i, 531. Epichitosamolactone hydrochloride (LE-VENE), A., i, 531. d-Epichondrosamic acid (Levene), A., i, 531. **Equation** of state, values of b and \sqrt{a} in the (VAN LAAR), A., ii, 73, 185, 291. new (Shaha and Basu), A., ii, 291. Equilibria, in-, uni-, and bi-variant (SCHREINEMAKERS), A., ii, 157. in univariant systems (Morey and Williamson), A., ii, 66. chemical, one-sided (BAUR), A., ii. 157.Equilibrium, chemical, laws of (WIL-LIAMSON and MOREY), A., ii, 66. in binary systems, influence of substitution on (KREMANN and PETRIT-SCHEK), A., ii, 68, 69. Equilibrium constants, calculation of (LEWIS), T., 471; A., ii, 623. Equivalents, pressure method for determination of (CHAPIN), A., ii, 258. Erepsin in urine (HEDIN and MASAI), A., i, 90. Ergotinine, supposed formation of ergotoxue ethyl ester from (BARGER and EWINS), T., 235; A., i, 267. detection of (WOLTER), A., ii, 414. Ergotoxine, ethyl ester, supposed formation of, from ergotinine (BARGER and EWINS), T., 235; A., i, 267. Erythrodextrin, formation of, in starch hydrolysis (Blake), A., i, 254.

Erythrosin, tetraiodo-. See Fluorescein, octaiodo-

Eserine (physostigmine), constitution of

(HERZIG and LIEB), A., i, 504. Escretholemethine,, and its salts (MAX and Michel Polonovski), A., i, 504.

Esters, preparation of, from nitriles (Spiegel and Szydlowsky), A., i, 216; (Pfeiffer), A., i, 389.

optical and chemical processes in the formation of (HANTZSCH), A., ii, 4. physical properties of (MATHEWS and

FAVILLE), A., i, 153. velocity of hydrolysis of (VERKADE; ANDERSON and PIERCE), A., ii, 103; (PALOMAA; BÜRKI), A., ii,

aliphatic, preparation and hydrolysis of (DRUSHEL and BANCROFT), A.,

Esterification (FREAS and REID), A., ii,

in aqueous solution (Purgotti), A., ii, **4**34.

Ethane, density of (STAHRFOSS), A., ii,

Ethers, chlorobromo-, preparation of (MADINAVEITIA and PUYAL), A., i,

Ether alcohols, preparation of (PALO-MAA), A., i, 522.

Etheserolene, and bromo-, and nitro-(MAX and MICHEL POLONOVSKI), A., i, 505.

Ethoxyaniline, B-bromo-, hydrobromide (Jacobs and Heidelberger), A., i, 71.

o-Ethoxydiazobenzenesulphonic sodium salt (Franzen and Schmidt), A., i, 82.

α-Ethoxy-β-ethylbutane, B-chloro-(PALOMAA), A., i, 522.

α-Ethoxy-β-ethylbutan-β-ol (PALOMAA), A., i, 522.

4(or 3)-Ethoxy-2-o-hydroxybenzhydrylbenziminazole (Bistrzycki SCHMUTZ), A., i, 453.

 α -Ethoxy- β -methylpropane, B-chloro-(PALOMAA), A., i, 522.

 α -Ethoxy- β -methylpropan- β -ol (PALO-MAA), A., i, 522.

Ethoxyphenylcarbamide, B-bromo-(JACOBS and HEIDELBERGER), A., i,

Ethoxyphenylhydrazines, and their derivatives, and their decomposition by hydrochloric acid SCHMIDT), A., i, 81. (Franzen and

o-Ethoxyphenylhydrazinesulphonic acid, sodium salt (FRANZEN and SCHMIDT), A., i, 82.

 α -Ethoxy- β -propylpentan- β -ol (PALO-MAA), A., i, 522.

6-Ethoxyquinoline-4-carboxylic acid (Karrer), A., i, 39.

4-(6-Ethoxyquinolyl)-2-pyrrylcarbinol (KARRER), A., i, 39.

4-(6-Ethoxyquinolyl) 2-pyrryl ketone (KARRER), A., i, 39.

6-Ethoxy-m-toluic acid, and its ethyl ester (v. Auwers), A., ii, 343.

p-Ethoxy-o-tolyl ethyl ketone, and its oxime (v. Auwers), A., ii, 342.

p-Ethoxy-o-tolyl methyl diketone (v. Auwers), A., ii, 342.

Ethyl alcohol, history of the preparation of (v. Lippmann), A., i, 210.

preparation of, in the eighth century (DEGERING), A., i, 97.

mobility of ions in vapour of (YEN), A., ii, 213.

density of mixtures of water and (SCHOORL and REGENBOGEN), A., i,

association of organic compounds in solution in (INNES), T., 410; A., ii,

equilibrium of phenol, acetamide and (KREMANN and WENZING), A., i,

catalytic decomposition of (ENGEL-DER), A., ii, 13.

action of phosphoryl chloride on (BALAREFF), A., i, 97.

action of soda lime with (CARROLL), A., i, 210.

amount of, taken up by the lungs (Loewy and v. der Heide), A., i, 327.

estimation of, in spirits (NAG and Lal), A., ii, 411.

Ethyl ether, isochore for (Weiss), A., ii, 291.

equilibrium of acetone and (SAMEsніма), A., ii, 429.

detection of aldehydes in (MAUE), A., ii, 336.

Ethyl chloride and iodide, mobility of ions in vapours of (YEN), A., ii,

hypochlorite, reaction of, with sodium arsenite and with a mixture of potassium cyanide and hydrosulphide (GUTMANN), A., i, 98.

iodide, relative activities of methyl iodide, propyl iodide and, with sodium a- and \(\beta\)-naphthoxides sodium a- and \(\beta\)-naphthoxides (Cox), T., 666; A., ii, 356.
nitrite, action of pyrrole on (Cus-MANO), A., i, 77.

barium phosphate, hydrated (BALA-REFF), A., i, 1.

hydrogen phosphite, metallic salts of (MILOBENDZKI and SZWEJKOWSKA), A., i, 479.

Ethyl sulphate, hydrolysis of, with sodium ethoxide or methoxide (Pol-LAK and BAAR), A., ii, 161.

Ethylamine, preparation of (WERNER), Т., 899.

α-Ethylaminoglyoxylic acid, ethyl ester dichlorophenylhydrazone (Bulow and Hess), A., i, 42.

Ethylarecaidine chloride (WINTERSTEIN and WEINHAGEN), A., i, 36.

Ethylbenzene (phenylethane), compounds of hydrogen bromide with (MAASS and Russell), A., i, 534.

Ethylbenzene, bromonitro-derivatives (REICH, AGAMIRIAN, KOEHLER, GAJ-KOWSKI and LUBECK), A., i, 262.

1-Ethylbenzene, 4-mono-, and 2:-4-di-thiol- (POLLAK, v. FIEDLER, and Rотн), A., i, 498.

1-Ethylbenzene-2:4-disulphonic acid. and its sodium salt and derivatives (Pollak, v. Fiedler, and Roth), A., i, 498.

1-Ethylbenzene-2:4-dithiolacetic acid (Pollak, v. Fiedler, and Roth), A., i, 499.

1-Ethylbenzene-4-thiolacetic acid (Pol-LAK, v. FIEDLER, and ROTH), A., i, 499. 1-o-Ethylbenzylmorpholine, and its salts

(v. Braun and Köhler), A., i, 269. O-Ethylepiberberine (Perkin), T., 521; A., i, 349.

Ethylcampholenic acid, and its amide and nitrile (HALLER and LOUVRIER), A., i, 397.

B-Ethylcarbonatoethylidenemalonic acid, ethyl ester (v. Auwers and Auffenberg), A., i, 480.

2-Ethylcarbonatonaphthalene-6-sulphonic acid, sodium salt and anilide (ZINCKE and DERESER), A., i, 221.

2-Ethylcarbonatonaphthalene-6-thiol, and its acetate (ZINCKE and DERESER), A., i, 221.

2-Ethylcarbonato-6-naphthyl methyl sulphide, sulphone and sulphoxide (ZINCKE and DERESER), A., i, 221. Ethyl α-chloro-β-bromoisoamyl ether

(MADINAVEITIA and PUYAL), A., i,

Ethylene, isochore for (WEISS), A., ii, 291. density of (BATUECAS), A., i, 369; (STAHRFOSS), A., ii, 312.

Ethylene, dichloro-, narcotic action of (WITTGENSTEIN), A., i, 326.

trichloro-, decomposition of, with formation of hydrogen chloride (ELSNER), A., i, 210.

NN'-Ethylenebis-(2-hydroxymethylbenzamide), and its diphenylurethane (BISTRZYCKI and SCHMUTZ), A., i, 453.

NN'-Ethylenebis-(o-hydroxyphenylacetamide), and its diphenylurethane (BISTRZYCKI and SCHMUTZ), A., i, 454.

Ethylenediaminepropylenediaminecobaltic salts, dinitro-, flavo- and croceo-derivatives of (WERNER), A., i, 377.

NN'-Ethylenediphthalimidine, and its (BISTRZYCKI derivatives SCHMUTZ), A., i, 453.

Ethyleneglycol, & diglucoside of (Bour-QUELOT and BRIDEL), A., i, 6.

NN'-Ethylenephthalimidephthalimidine (BISTRZYCKI and SCHMUTZ), A., i, 453.

NN'-Ethylenephthalimidine-o-carboxybenzamide, and silver salt its (BISTRZYCKI and SCHMUTZ), A., i, 453.

Ethylhæmin, β-bromo- (Küster, Geering, and Kusch), A., i, 200.

1-Ethylhydrindene, 1-hydroxy-

1-Ethylnyurinucho,
Braun), A., i, 111.
1-Ethylindene (v. Braun), A., i, 111.
2:3-dihydroxy-. See 2:3-Dihydroindole-2glyoxylic acid, 2:3-dihydroxy-, ethyl ester.

β-Ethyloxalatoethylene-ααβ-tricarboxylic acid, ethyl ester (v. Auwers

and AUFFENBERG), A., i, 481.
-Ethyloxalato-isatin. See Isatin-1-N-Ethyloxalato-isatin. glyoxylic acid, ethyl ester.

Ethylisopropylbarbituric acid (THORP), A., i, 271.

Ethylselenocarbamide (CHEMISCHE FABRIK VON HEYDEN), A., i, 482. Ethyltetrahydroarecaidine (WINTER-

STEIN and WEINHAGEN), A., i, 36.

1(?)-Ethylthiocarbonatobenzene, chloro-3(?)-thiol- (POLLAK, V. FIED-LER, and ROTH), A., i, 499.

β-Ethylthioglucoside, and its tetra-SEPP, (SCHNEIDER, STIEHLER), A., i, 253.

Ethylurethane, solubility and dissociation of electrolytes in (STUCKGOLD), A., ii, 99.

Eucalyptol, chlorinated, as a solvent for dichloroamine-T. (KRAUSS and CREDE), A., i, 62.

Europium, arc spectra of (EDER), A., ii, 181.

Eurosamarium, arc spectra of (EDER), A., ii, 181.

Exidia auricula Judæ, constituents of (ZELLNER), A., i, 55.

Explosives, liquid, transmission of detonation in (BECKER), A., ii, 7. estimation of nitrogen in (ODDO), A., ii, 48.

action, definition of Explosive (SCHIMANK), A., ii, 296.

kplosive substance, de (SCHIMANK), A., ii, 296. definition Explosive

laboratory Extraction apparatus, (Schwalbe and Schulz), A., ii, 227. modified Soxhlet (WEIR), A., ii, 192.

F.

Fæces, excretion of saponin in (Bäck), A., i, 325.

estimation of coprosterol in (MYERS and WARDELL), A., ii, 461.

estimation of indole in (BERGEIM), A., ii, 23.

estimation of phosphorus in (SATO), A., ii, 406.

Fagopyrum fagopyrum (buckwheat), globulin of (Johns and Chernoff), A., i, 315.

Fat of butter. See Butter-fat.

Fats, animal and vegetable (WEIN-HAGEN), A., i, 56.

action of symbiotic bacteria on the constituents of (BIERRY PORTIER), A., i, 358.

saponification of (TREUB), A., ii, 71,

estimation of the iodine number of (Kelber and RHEINHEIMER). A., ii, 87.

dropping-point apparatus for analysis of (Dupré), A., ii, 376.

detection of, with Sudan III (Mor-

TRAM), A., ii, 338.
Feathers of birds. See Birds.

and γ-Fenchene, synthesis (Komppa and Roschier), A., i, 445. β -Fenchenic acid, dl-hydroxy-, and its (Komppa derivative Roschier), A., i, 445.

α-Fenchenylanic acid, synthesis (KOMPPA and ROSCHIER), A., i, 429. dl-a-Fenchocamphorol (Komppa Roschier), A., i, 430.

dl-a-Fenchocamphoryl chloride (Komp-PA and Roschier), A., i, 430.

Fenchone, synthesis of (Ruzička), A., i, 22.

Fenchosantenone, \mathbf{o} xime and semicarbazone of (Ŕuzička), A., i, 24.

Fermentation, alcoholic, theory (NEUBERG REINFURTH), and A., i, 517.

intermediate reactions in (v. EULER, OHLSEN, and JOHANSSON), A., i, 149.

effect of aldehydes on (NEUBERG), A., i, 469.

formation of phosphoric esters in (LEBEDEV), A., i, 364.

Fermentation, alcoholic, formation of hexosephosphates during (v. EULER, SVANBERG, HALLBERG, and BRAND-TING), A., i, 54; (NEUBERG, LEVITE, and SCHWENK), A., i, 91.

formation of lactic acid in (LEBEDEV),

A., i, 149.

plant function of yeast in (LINDET), A., i, 329.

lactic acid (VAN DAM), A., i, 363. action of sodium phosphate in (v. EULER and SVANBERG), A., i, 55.

Ferments. See Enzymes.

Ferriarsenites (ORYNG), A., ii, 317.

Ferric salts. See under Iron.

Ferrimalonic acid, complex salts of (JAEGER and MEES), A., i, 4.

Ferrosilicon, estimation of silicon in

(NICOLARDOT and KOENIG), A., ii, 407.

Ferrous salts. See under Iron.

Ferrum reductum, estimation of iron in (EBERHARD), A., ii, 48.

Ferulene (SEMMLER, Jonas, and ROENISCH), A., i, 118.

Fibres, use of, in microscopic qualitative chemical analysis (CHAMOT and COLE), A., ii, 129.

Fibrin, acid hydrolysis of (GORTNER and Holm), A., i, 83, 84.

hydrolysis of, in presence of ferric chloride (Morrow and FETZER), A., i, 248.

swelling of, in acids and their salts (FISCHER and BENZINGER), A., i,

Fibrin ferment (thrombin), rate of formation of (MELLANBY), A., i, 87.

Filter, membrane (ZSIGMONDY and Bachmann), A., ii, 307.

Filtration. See Ultra-filtration.

Filtration apparatus (OSTWALD), A., ii, 192; (Härtel), A., ii, 359.

with stirrer (Feigl), A., ii, 227. Filtration tube (THORNTON), A., ii, 123. Firefly, bioluminescence in (HARVEY),

A., i, 89. Fisetol, attempted synthesis of (TAM-

BOR and DU BOIS), A., i, 395. Fish, poison for (ISHIKAWA), A., i,

edible, analyses of (CLARK and ALMY), A., i, 280.

Flame, propagation of, in mixtures of methane and air (Mason and (Wheeler), T., '45; A., ii, 10, 70; (PAYMAN and WHEELER), T., 656; A., ii, 356; (Wheeler), T., 840.

residual and extinctive atmospheres

of (RHEAD), A., ii, 362. Bunsen, reduction of metallic oxides in (PAPISH), A., ii, 309.

Flame, luminous, determination of the temperature of (SENFTLEBEN and BENEDICT), A., ii, 257.

Flavanthrene, synthesis of (SCHOLL and DISCHENDORFER), A., i, 308.

Flavone derivatives in plants (SHIBATA

and NAGAI), A., i, 331. eas, water. See Water-fleas. Fleas, water.

Flocculation (Pickering), A., ii, 189.

Flokite (CALLISEN), A., ii, 326.

characteristic equation (Weiss), A., ii, 291, 354.

Fluidity, and specific volume of aqueous solutions (HERZ), A., ii, 155.

of liquid mixtures (HERZ), A., ii, 389. Fluorene, colour reactions of, with aldehydes and carbohydrates (Gu-GLIALMELLI and DELMON), A., i,

and diphenylmethane, action of sulphur on (SZPERL and WIERUSZ-

Kowalski), A., i, 492.

Fluorescein, tetraiodo-, and its derivatives (PRATT and COLEMAN), A., i,

octaiodo-, and its derivatives (PRATT and Coleman), A., i, 176.

Fluorescence (Perrin), A., ii, 418. of cyano-compounds (Kauffmann), A., i, 113.

Fluorine :-

Hydrofluoric acid, use of, in analysis (FURMAN), A., ii, 277.

Fluorine, estimation of, as thorium fluoride (Gooch and Ковачаяні), А., ii, 238.

Fluorocyclene, preparation of (DZIEwonski and Suknarowski), A., i,

Foaming, inhibition of (FISKE), A., ii, 358.

Food-stuffs, inositol-phosphoric acids of

(RATHER), A., i, 212. detection and estimation of methyl alcohol in (v. Fellenberg), A., ii, 177.

estimation of purine bases in (v. Fel-LENBERG), A., ii, 415.

Formaldehyde, photosynthesis of, from carbon dioxide (Moore and Web-STER), A., ii, 211.

evolution of the vapour of, from formalin (Bolten), A., i, 290.

action of, as a negative catalyst in sugar reactions (MAGGI and WOKER), A., ii, 22.

action of carbamide and (DIXON), T., 238; A., i, 255.

action of, on glycine and its metallic salts (KRAUSE), A., i, 156.

action of, on a-2-piperidylpropan-\$\beta\$-ol (HESS and EICHEL), A., i, 36.

Formaldehyde, action of, on starch (MAGGI and WOKER), A., i, 375.

behaviour of, in the organism, and its detection in presence of urotropine (Salkowski), A., i, 362.

detection of, by the Adamkiewicz reaction (Voisenet), A., ii. 280.

estimation of amino-acids with (Jo-DIDI), A., ii, 379.

Formaldehydebenzaldehydesulphoxylic acid, and its p-toluidine derivative (BINZ), A., i, 291.

Formaldehydepiperylhydrazone (WEIN-

HAGEN), T., 586; A., i, 395.

Formalin, evolution of the vapour of formaldehyde from (Bolten), A., i,

Formamide, preparation of (Brann), A., i, 292.

effect of dissolved substances on the velocity of crystallisation of (Brann), A., ii, 394.

Formamidines, reactions of (DAINS and HARGER), A., i, 238.

Formaniliae, association of, in benzene (INNES), T., 432.

Formic acid, distillation of aqueous mixtures of (ŒCHSNER DE CONINCK), A., i, 523.

action of, on triarylcarbinols (Kovасне), А., і, 539.

uranyl salt, photolysis of (HATT), A., ii, 143.

of hydrolysis of esters (SKRABAL and SPERK), A., ii, 12. esters, physical properties of (MAT-

HEWS and FAVILLE), A., i, 153. dihydrocholesteryl ester (FARBENFAB-BRIKEN VORM. F. BAYER & Co.),

A., i, 209. detection of, with hyposulphites (Co-

MANDUCCI), A., ii, 248.

estimation of, in mixtures with acetic and lactic acids (ONODERA), A., ii,

estimation of, volumetrically, in presence of hydroxides, carbonates, oxalates and acetates (TSIROPINAS), A., ii, 137.

Formomethylanilide, p-amino-, p-nitro- (LEVINSTEIN and MORGAN), A., i, 107.

Formyldiphenylamine, association of, in benzene (INNES), T., 431.

Formylmethylaminobenzene-4-azo- β naphthol (Morgan and Grist), T., 692; A., i, 450.

Formylmethylaminobenzene-4-diazohydroxide (Morgan and Grist), T., 692; A., i, 450.

Formylphenylacetic acid, isomeric ethyl esters (DIECKMANN), A., i, 15.

as-Formyl-p-phenylenemethyldiamine. See Methylformanilide, p-amino-.

Freezing points of concentrated salt solutions (RODEBUSH), A., ii, 388. of serums, clinical value of (EIGEN-

BERGER), A., i, 512.
Friedel and Crafts' reaction, mechanism of (OLIVIER), A., i, 228.

Frog, secretion of the skin of the

(FLURY), A., i, 325.

Fructosediphosphoric acid, calcium salt (FARBENFABRIKEN VORM, F. BAYER & Co.), A., i, 254.

Fuller's earth, use of the adsorptive power of, in separations (SEIDELL), A., ii, 62.

Fulminic acid, mercury salt (Hodgkinson), A., i, 381.

properties of, and its estimation (HEAVEN), A., ii, 233.

velocity of explosion of (MITTAG), A., ii, 438.

colour reaction of phenylhydrazine with (Langhans), A., ii, 414. of (NICOLARDOT analysis

BOUDET), A., ii, 134. Fumaric acid, action of fumaryl chloride on (VAN DORP and MONTAGNE), A., i,

Fumaronitrile, preparation of, and its with hydroxylamine (Mc-MASTER and LANGRECK), A., i, 338.

Fumaryl chloride, action of fumaric acid with (VAN DORP and MONTAGNE), A., i, 334.

Fundulus, eggs of. See Eggs.

Fungi, higher, chemistry of (Zellner), A., i, 55.

Furfuraldehyde, condensation of pyrryl methyl ketones with (Finzi and Vессні), А., і, 447.

Furfuroids, estimation of, in beet residues (GILLET), A., ii, 248.

2-Furfuryl bromide (v. Braun and Köhler), A., i, 163.

1-Furfurylidene-3-benzylideneindane (WÜEST), A., i, 490.

1-Furfurylidene-3-benzylindene (Wüest), A., i, 490.

Furfurylidenediacetyl oxime. See B-2-Furylvinyl acetyl ketoxime.

1-Furfurylidene-3-furylhydroxymethylindene (Wüest), A., i, 491.

1.Furfurylideneindene, and its picrate (Wüest), A., i, 490.

1-Furfurylidene-3-methylindene, and its

picrate (WÜEST), A., i, 489. Furfurylmethylamine, benzoyl deriv-2-Furfurylmethylamine, benzoyl derivative (v. Braun and Köhler), A., i,

2-Furfurylmethylethylamine, and its salts (v. Braun and Köhler), A.,i, 163. 2-Furfurylmethyl-\$-hydroxyethylamine, and its salts (v. BRAUN and Köhler), A., i, 163.

2-Furfuryltrimethylammonium platinichloride (v. BRAUN and KÖHLER), A., i, 163.

Furnace, electric. See Electric furnace. See 1-Furfuryl- ω -Furylbenzfulvene. ideneindene.

3-Furylmethyl-1-benzylideneindene (WÜEST), A., i, 490.

a-2-Furyl-γ-methyl-Δa-butene (Schaar-SCHMIDT, GEORGEACOPOL, and HER-ZENBERG), A., i, 432.

3-Furylmethyl-1-furfurylideneindene (WÜEST), A., i, 491.

3 Furylmethylindene (Wüest), A., i, 490.

β-2-Furyl-α-isopropylacrylic (SCHAARSCHMIDT, GEORGEACOPOL, and HERZENBERG), A., i, 432.

β-2-Furylvinyl acetyl ketoxime, isomerides and derivatives of (DIELS and ROEHLING), A., i, 400.

Fusarium, amygdalin as nutriment for (WATERMAN), A., i, 55.

G.

Gadolinium, are spectrum of (EDER), A., ii, 89.

purification of (JORDAN and HOPKINS), A., ii, 44.

Galactose, toxicity of, towards green plants (KNUDSEN), A., i, 95.

Gallaldehyde and its p-nitrophenylhydrazone (Rosenmund and Zetzscне), A., i, 300.

Gallium, estimation and separation of (Dennis and Bridgman), A., ii, 456.

Galloyl-fructose and -diacetone (FISCHER and Noth), A., i, 227.

Galloylglucose (Fischer and Berg-MANN), A., i, 225.

(Fischer Galloylglucoseacetone and BERGMANN), A., i, 225.

Galloylglucosediacetone (FISCHER and BERGMANN), A., i, 225.

Gall-stones, human, fat in (SALKOWSKI), A., i, 90.

Gas analysis (Henderson and Smith), A., ii, 81; (Anderson), A., ii,

84. applications of (PRINCE; HENDERSON; HENDERSON and PRINCE), A., i,

136. general method of (LEBEAU and Damiens), A., ii, 81.

reagents for (ANDERSON and KATZ), A., ii, 124.

Gas analysis, carbon monoxide in the "chlorate pipette" in (HOFMANN and SCHIBSTED, A., ii, 329.

Gas analysis apparatus, Haldane's (Henderson), A., ii, 81.

Gas dilatometer, for determination of decomposition points (MOORE and DAVIES), A., ii, 154.

Gas equilibria, calculation of (TREAD-WELL), A., ii, 59.

Gas generator (WINKLER), A., ii, 227; (Bruck), A., ii, 358.

interferometer, calibration (EDWARDS), A., ii, 47.

use of (Seibert and Harpster), A., ii, 367.

Gas warfare, methods of (Auld), A., i,

Gases, emission spectra of (HAMBURGER), A., ii, 210.

absorption of Röntgen rays in (LANG), A., ii, 93.

radioactive. See Radioactive gases. electric discharge through (WRIGHT), T., 79; A., ii, 51.

mobility of ions in (YEN), A., ii, 212,

ionisation during interaction of (PIN-KUS), A., ii, 286.

thermal conductivity of (WEBER), A.,

compressibility and dilatability of (LEDUC), A., ii, 155.

solution of, in liquids (MICHAUD), A., ii, 293.

liquefied, viscosity of (Verschaffelt), A., ii, 221.

diffusion of, through rubber (DEWAR), A., ii, 186.

adsorption of, on plane surfaces of solids (LANGMUIR), A., ii, 430.

energy changes during collisions in (HERTZ), A., ii, 105.

ignition of mixtures of (Mason and WHEELER), T.. 45; A., ii, 10, 70; (PAYMAN and WHEELER), T., 656; A., ii, 356; (WHEELER), T., 840; (McDavid), A., ii, 10.

fractional combustion of (BANCROFT), A., ii, 13.

chemically indifferent, measurement of volume changes on mixing, by refraction methods (Fuchs), A., ii, 298.

conductivity mixed, thermal (WEBER), A., ii, 216.

estimation of vapours of liquids in (H. S. and M. D. DAVIS), A., ii, 411.

Gasometer (MILBAUER), A., ii, 271. Gastric juice, estimation of chlorine in (SIROT and JORET), A., ii, 237; (GEORGES and FABRE), A., ii, 272.

Gastric juice, estimation of enzymes in (MICHAELIS), A., ii, 468.

estimation of free hydrochloric acid in (KELLING; DELORT and ROCHE), A., ii, 450.

Gauge, vacuum (KARRER), A., ii, 264. Gedrite from Hungary (PAWLICA), A., ii, 170.

Gelatin, influence of electrolytes on the osmotic pressure of solutions of (LOEB), A., i, 510.

acid hydrolysis of (GORTNER and

HOLM), A., i, 84. swelling of, in acids and their salts (Fischer and Hooker), A., i, 130; (FISCHER and COFFMAN), A., i, 131.

swelling of, and the viscosity of its solutions (LOEB), A., i, 317, 318.

action of electrolytes on the precipitation of, by alcohol (FENN), A., i, 198, 240, 318, 319; (Loeb), A., i, 240, 413.

Gels, structure of (OSBORNE; BACH-MANN), A., ii, 433.

formation of crystals in (HOLMES), A.,

 ψ -Geneseretholemethine, and its salts (MAX and MICHEL POLONOVSKI), A.,

ψ-Geneserinemethine, and its salts (MAX and Michel Polonovski), A., i,

ψ-Geneserolenemethine, and its derivatives (Max and Michel Polonovski), A., i, 505.

Genisteine, and its salts (VALEUR), A., i, 403.

Gentiana germanica, crystalline substances in the leaves of (Molisch), A., i, 247.

Gentiolutein (Molisch), A., i, 247.

Geologic time, estimates of, from radioactivity data (Shelton), A., ii, 14.

Gerhardt, Charles, celebration of the centenary of, A., ii, 16.

Germination, action of mineral acids on (MAQUENNE and DEMOUSSY), A., i, 243.

Gilpinite from Colorado (LARSEN and Brown), A., ii, 120.

Ginger, pungent principles of (Nomura), A., i, 396, 446.

Gitaline, rotation and molecular weight of (Burmann), A., i, 122.

Glands, suprarenal. See Suprarenal glands.

Glaskopf," formation of (LEITMEIER and Goldschlag), A., ii, 118.

Glass, adsorption of gases by (LANG-MUIR), A., ii, 430. corrosion of, by sodium hydroxide

(VAN NIEUWENBURG), A., ii, 19.

Glass, optical, barium disilicate crystals in (Bowen), A., ii, 198.

analysis of (RONNET), A., ii, 206.

Glass tips for drop-weight apparatus (DAVIES), A., ii, 228.

Glauber, Johann Rudolph (BRIEGER), A., ii, 396. Rudolph, life records of the death of (Jorissen), A.,

Globulin (STARKE), A., i, 83.

 ψ -Globulin, denaturation of, by heat (Homer), A., i, 138.

Glucinum nitride (Vournasos), A., ii,

Glucoacetovanillone, and its tetraacetyl derivative (MAUTHNER), A., i,

Gluco-p-coumaric acid, and its methyl ester, tetra-acetyl derivative (MAUTH-NER), A., i, 545.

Glucoferulic acid, and its methyl ester, tetra-acetyl derivative (MAUTHNER), A., i, 545.

Glucosalicylic acid, methyl ester, tetraacetyl derivative (MAUTHNER), A., i, 545.

I-Glucosan, conversion of, into dextrin (PICTET), A., i, 527.

Glucosazone, formation of, in the ozazone reaction (GARARD and SHER-MAN), A., i, 335. d-Glucose. See Dextrose.

Glucose benzyl, ethyl, methyl, and propyl mercaptals, and their penta-(SCHNEIDER, acetates SEPP. STIEHLER), A., i, 253.

Glucosides, synthetic (MAUTHNER), A., i,

of the amygdalin group, nomenclature of (BOURQUELOT), A., i, 347. digitalis (MEYER), A., i, 367.

Glucosides. See also :--

Convolvulin. Jalapin. Linamarin. Oleandrin.

Uzarin.

Glycerol, equilibrium in the system: aniline, water, and (KOLTHOFF), A., i, 63.

catalytic decomposition of (Sabatier and GAUDION), A., i, 334.

estimation of (BECKERS and KOLT-

estimation of, by the copper method (Weiss), A., ii, 374.
estimation of, by the iodide method (Neumann), A., ii, 21.
estimation of water in (Kolthoff),

A., ii, 178.

Glyceryl chlorohydrins, formation of (Ѕмітн), А., і, 370.

Glycine, isomeric forms of (FALK and Sugiura), A., i, 292.

action of formaldehyde on, and its metallic salts (Krause), A., i, 156. injection of, and its derivatives, and

elimination of dextrose (GREEN-WALD), A., i, 513. metabolism of. See Metabolism.

Glycineanilide, bromoacetyl derivative (Dubsky and Gränacher), A., i, 189. Glycol, $C_{10}H_{20}O_2$, from d-pinol hydrate

(WALLACH and PELIKAN), A., i, 446. Glycol. See Ethylene glycol.

Glycols, preparation of (HIBBERT), A., i, 521.

and their derivatives, preparation of (CHEMICAL DEVELOPMENT Co.), A., i, 288.

Glycol esters, preparation of solutions of (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 165.

Glycollamidine, salts of (Rule), T., 17. Glycollyl $\cdot p$ -anisidine (FARBWERKE vorm. Meister, Lucius, & Brüning), A., i, 536.

Glycollyl-p-phenetidine (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 536.

Glycosuria. See Diabetes.

Glycuronic acid, detection of, by the naphtharesorcinol reaction (VAN DER HAAR), A., ii, 376.

Glyoxalones, preparation of, from hydrolysis of pyrimidine nucleosides (Johnson), A., i, 81.

Glyoxylic acid, fermentation of (LEBE-DEV), A., i, 365..

Gold, colloidal, precipitation of, on metallic surfaces (SPEAR and KAHN), A., ii, 66.

> coagulation in solutions of (Zsig-MONDY), A., ii, 101.

hydrosols, coagulation of (Westgren and Reitstötter), A., ii, 301.

Gold alloys with copper and with silver, resistance of, to chemical reagents (TAMMANN), A., ii, 445, 447.

with silver and lead (Goto), A., ii, 365.

Gold compounds, behaviour of, at high temperatures and pressures (MORRIS), A., ii, 270.

Gold chloride, adsorption of, from its solutions by charcoal (Koch), A., ii,

Gold, estimation of, in sea-water (KOCH), A , ii, 186.

Gold ores, from the Côte d'Ivoire (Roux), A., ii, 203.

Gossypol, preparation and derivatives of (CARRUTH), A., i, 266; (WITHERS and CARRUTH), A., i, 327.

Goyazite (DE GRAMONT), A., ii, 170. Grape-fruit, American. See Citrus decumana.

Growth, water-soluble substance promoting (Drummond), A., i, 358. antagonistic action of metallic salts on (OSTERHOUT), A., i, 331.

Growths, organic, filaments of metals

resembling (LILLIE), A., i, 278.

Guaiacol, preparation of (ZOLLINGER and Röhling), A., i, 497. detection of (MAUE), A., ii, 336.

Guaiacol, nitro-derivatives of (Polle-COFF and ROBINSON), T., 645; A., i,

Guaiacolsulphonic acid, potassium salt, detection and estimation of (PALKIN), A., ii, 375.

Guanidine, metabolism induced by injection of, and its salts (WATAN-ABE), A., i, 205, 327.

in muscle after removal of the parathyroids (HENDERSON), A., i. 279. phosphotungstate (Drummond), A., i, 337.

Guanosine-adenosine-phosphoric and its brucine salt (THANNHAUSER and Dorfmüller), A., i, 317.

Guinea-pigs, scurvy in (HARDEN and ZILVA), A., i, 562.

Gum ammoniac oil, constituents of (SEMMLER, JONAS, and ROENISCH), A., i, 118.

Gum benzoin, Sumatra, constituents of (LIEB and ZINKE), A., i, 502.

Guvacine, constitution of (Hess and LIEBBRANDT). A., i, 401.

constitution and derivatives of (FREU-DENBERG), A., i, 403.

methyl ester of. See Guvacoline. Guvacoline, aud its hydrobromide (HESS), A., i, 403.

Gypsum, etching of, by sulphuric acid (Grengg), A., ii, 448.

H.

Hæmatin in human blood-serum (FEIGL; FEIGL and DEUSSING), A., i, 241.

Hæmin, constitution and esterification of (KÜSTER), A., i, 200.

preparation of crystals of (ZAWALKIE-WICZ), A., i, 316; (BOKARIUS), A., ii, 467.

action of aniline on (Kuster and Lob-MILLER), A., i, 200.

action of diazomethane on (Küster, GEERING, and Kusch), A., i, 199.

Hæmoglobin (DE GRAAFF), A., i, 510. preparation of strong solutions of, and colour filters of its compounds (HARTRIDGE), A., i, 316.

Hæmoglobin, estimation of, colorimetrically (Palmer), A., ii, 88; (Berczel-LER), A., ii, 340.

Hæmolysis (Herzfeld and Klinger), A., i, 357.

Haliotis (abalone), preparation of taurine from (SCHMIDT and WATSON), A., i. 255.

Halogens, estimation of, in presence of mercury (François), A., ii, 271.

Halogen organic compounds, formation and decomposition of (BIILMANN), A., i, 212.

catalytic reduction of (Rosenmund and Zetzsche), A., i, 339.

Heart, measurement of the minute volume of (FRIDERICIA), A., i, 275. effect of casium ions on the action of the (ZWAARDEMAKER), A., i, 326.

Heat, atomic, volume elasticity and frequency of monatomic metals (BER-NOULLI), A., ii, 427.

specific, theory of (JANKOWSKY), A., ii, 59; (DRUCKER), A., ii, 216. at low temperatures (KEESOM and Onnes), A., ii, 217. of elements (MILLS), A., ii, 7.

Heat of combustion of paraffins (LAGER-LÖF), A., ii, 62.

Heat of dilution and its variation with temperature (PRATT), A., ii, 220.

Heat of formation, relation of, to the atomic weights and density of the reacting elements (FEHRLE), A., ii, 296.

Heat of solution, fictitious, determination of (Cohen and Bruins), A., ii, 297.

Helicofuscin (DHÉRÉ and VEGEZZI), A., i, 85.

Helicorubin (Dhéré and Vegezzi), A., i, 85.

Helium, atomic weight of (GUYE), A., ii, 224.

spectrum of, under the influence of an electric field (TAKAMINE and Yoshida), A., ii, 253.

Helix pomatia, colouring matters in the bile of (DHERE and VEGEZZI), A., i,

Helpen, Berend Coenders van, life and work of (JAEGER), A., ii, 164.

Heptaldehyde, reduction of (LEVENE and TAYLOR), A., i, 422.

Heptamethyl methyl-lactoside worth and Leitch), T., 195; A., i, 213.

 $\alpha\delta\eta$ -Heptanetriol, synthesis of (HA-MONET), A., i, 421.

Δα-Heptenylarsinic acid. B-chloro-(FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 257.

Heptinenechloroarsinic acid. See Δα-Heptenylarsinic acid, β-chloro-.

Heptylidenehydrazine (DARAPSKY), A., i, 554.

Heteropoly-acids (Rosenheim and Jä-Nicke), A., ii, 19, 48, 77.

Hexaisobutyldistannane (GRÜTTNER), A., i, 160.

Hexadecyl alcohol, association of, in benzene and alcohol (INNES), T., 431.

Hexaethyldistannane (GRÜTTNER), A., i, 159.

ακ-Hexaethyldistannyldecane (Grütt-NER, KRAUSE, and WIERNIK), A., i, 135.

αε-Hexaethyldistannylpentane (GRÜTT-NER, KRAUSE, and WIERNIK), A., i, 135.

Hexahydrofarnesol (SEMMLER, JONAS, and ROENISCH), A., i, 119.

Hexahydrophthalimide (WILLSTÄTTER and JAQUET), A., i, 392.

αε-Hexamethyldiplumbylpentane (GRÜTTNER, KRAUSE, and WIERNIK),

A., i, 136.

Hexamethylenetetramine (urotropine),

Hexamethylenetetramine (urotropine), behaviour of, in the organism (Salkowski), A., i, 362.

o-acetoxybenzoate (EGGER), A., i, 299.

analysis of tablets of (EMERY and WRIGHT), A., ii, 378.

Hexamethyl methyl-lactoside (HA-worth and Leitch), T., 195.

Hexane, boiling point of mixtures of nitrobenzene and (BÜCHNER), A., ii, 9.

Hexa-n-propyldistannane (GRÜTTNER), A., i, 159.

Δβ-Hexenaldehyde, and its semicarbazone (Walbaum), A., i, 302.

azone (Walbaum), A., i, 302. Δγ-Hexen-α-ol (Walbaum), A., i, 302.

Δβ-Hexenyl alcohol, and its derivatives (WALBAUM), A., i, 302.

Hexosamic acids, epimeric (LEVENE), A., i, 530, 532.

Hexosediphosphoric acid, and its rôle in alcoholic fermentation (Neuberg, Levite, and Schwenk), A., i, 91.

Hexosephosphates, formation of, in alcoholic fermentation (v. Euler, Svanberg, Hallberg, and Brandting), A., i, 54.

Hide-powder, adsorption of hydrochloric acid by (Kubelka), A., ii, 390.

Hippuric acid, influence of the liver on the synthesis of (LACKNER, LEVIN-SON, and MORSE), A., i, 278, 559.

Hippuryl-β-alanine (BAUMANN and INGVALDSEN), A., i, 455.

Histidine, preparation of (Jones), A., i, 232.

Histidine, estimation of, volumetrically (LAUTENSCHLÄGER), A., ii, 466.

estimation of, in proteins (Thrun and Trowbridge), A., i, 324.

Hogelende, Theobald van, life and work of (JAEGER), A., ii, 437.

Hollandus, Jan Isaac and Isaac, the alchemists (JORISSEN), A., ii, 437.

Holmium. separation of (KREMERS and BALKE), A., ii, 200; (YNTEMA and HOPKINS), A., ii, 398.

Homatropine, detection of (RICHMOND), A., ii, 251.

Homberg, Willem, life and work of (JAEGER), A., ii, 164, 228.

Homofenchonic acid. See 3-Carboxy-3-methylcyclopentane-1-isobutyric acid.

Homonorcamphoric acid, and hydroxy-, and their methyl ethyl esters (HINTIKKA and KOMPPA), A., i, 543.

Homophorone, and its derivatives (DE-LACRE), A., i, 423.

Homotropine, and its salts and derivatives (v. Braun and Müller), A., i, 234; (Chemische Werke Grenzach), A., i, 235.

p: Homoveratronitrile (3:4-dimethoxyphenylacetonitrile) (KAUFMANN and MÜLLER), A., i, 178.

Horse chestnuts, constituents of (Masson), A., i, 518.

Hugo Müller Lecture (MIERS), T., 363; A., ii, 235.

Humin, formation of, by the acid hydrolysis of proteins (GORTNER and HOLM), A., î, 84.

Humus, estimation of, in soils (JAKOB-SEN), A., ii, 136.

Hydantoin, derivatives of (WEST), A., i,

Hydrastis powder, detection of berberine in, microchemically (Ess), A., ii, 466.

Hydrates, formation and determination of, in solutions (KENDALL, BOOGE, and ANDREWS), A., ii, 36.

Hydrazidinecarboxylic acids, esters, hydrolysis of (Bülow and Huss), A., i, 196.

Hydrazine hydrate, action of, with cyanotetrazole (LIFSCHITZ and DONATH), A., i, 353.

Hydrazines, amino- (Franzen and Mondlange), A., i, 458.

Hydrazino-acids (DARAPSKY), A., i, 506, 553.

Hydrazinodimalonic acid, dihydrazine salt (Darapsky and Prabhakar), A., i, 507.

α-Hydrazinophenylacetic acid, and its amide hydrochloride (DARAPSKY), A., i, 553. a-Hydrazinophenylacetic acid, and nitroso-, and their derivatives (DARAP-SKY and PRABHAKAR), A., i, 507.

5-Hydrazino-3-phenyl-5-m-nitrophenyl-4:5-dihydropyrazole, 4-hydroxy-

(Bodforss), A., i, 231.

a-Hydrazino-\beta-phenylpropionic acid, and a-nitroso-, and its derivatives (DARAPSKY and BERGER), 507.

α-Hydrazinopropionic acid, ethyl ester, hydrochloride (DARAPSKY and PRAB-HAKAR), A., i, 506.

4-Hydrazinostilbene, and its derivatives (FRANZEN), A., i, 458. a-Hydrazinoisovaleric acid, and its de-

rivatives (DARAPSKY and PRABHA-

KAR), A., i, 506. Hydrazophenylacetic acid, and its ethyl ester (DARAPSKY and PRABHAKAR),

A., i, 506. Hydrindene, trans-1:2-dihydroxy-, preparation and derivatives of (Börse-

KEN and VAN LOON), A., i, 388. 1-Hydrindone-2-carboxylic acid (ROBIN-

son and Crabtree), T., 879. Hydriodoapocinchonine (Léger), A., i, 232.

Hydroaromatic compounds, hydroxy-, pharmacology of (SASAKI and OKUsніма), A., i, 563.

Hydroatophan, physiological action of (Ронг), А., і, 515.

Hydrobromic acid. See under Bromine. Hydrobromoapocinchonine (Léger), A., i, 121.

Hydrocarbon, C₁₀H₁₈, from spinacene and sodium (CHAPMAN), T., 464.

 $C_{22}H_{16}$, and its picrate, from 2-iodo-1methylnaphthalene and copper (Weitzenböck), A., i, 493.

C₂₇H₄₈, from rice bran (Weinhagen), A., i, 56.

Hydrocarbons, electrochemical synthesis of, by Kolbe's method (FICHTER and Krummenacher), A., i, 369.

and their oxy-derivatives, molecular association of (Jorissen), A., ii, 8. dissociation of (MEYER and HOFMANN), A., i, 383.

solubility of, in liquid sulphur di-(MOORE, Morell,

Egloff), A., i, 285.

action of trioxymethylene on, in presence of aluminium chloride (Frankforter), A., i, 105.

aromatic, constitution of (LAGERLÖF), A., ii, 31.

sulphonation of, and their derivatives (Bull), A., i, 160.

gaseous, electric discharge through (WRIGHT), T., 79; A., ii, 51.

Hydrocarbons, paraffin, preparation of (FARBENFABRIKEN VORM.

BAYER & Co.). A., i, 209. boiling points of (LE BAS), A., ii,

tertiary, synthesis and oxidation of (LEVENE and CRETCHER), A., i, 250.

Hydrochloric acid. See under Chlorine. Hydrocinnamylcocaine (Boehringer

& Söhne), A., i, 547. Hydrocyanic acid. See under Cyanogen. Hydrofluoric acid. See under Fluorine. Hydrogen, atomic weight of (GUYE), A., ii, 224.

spectrum of, under the influence of an electric field (TAKAMINE and Yoshida), A., ii, 253; (NITTA), A., ii, 254.

ultra-violet canal ray spectrum of (Stark, Görcke, and STARK), A., ii, 141.

constitution and rotatory power of (SOMMERFELD), A., ii, 89.

scattering of light in (Born), A., ii,

action of light on mixtures of chlorine and (Padoa and Butironi), A., ii,

diamagnetism of, and the value of the magneton (Oxley), A., ii, 387.

mobility of ions in (YEN), A., ii, 212.

liquid and solid, specific heats of (KEESOM and ONNES), A., ii, 217. determination of the critical point of (Onnes, Crommelin, and Cath),

A., ii, 8. liquid, vapour pressure of (CATH and Onnes), A., ii, 218, 294.

viscosity of (Verschaffelt), A., ii, 221.

occlusion of, by metallic electrodes (Harding and Smith), A., ii,

absorption of, by sodium oleate (Anderson and Katz), A., ii, 124. rate of absorption of, by olive oil (MAXTED), A., ii, 72.

effect of hydrogen chloride on the equilibrium of nitrogen and (Lun-LAM), A., ii, 67.

Hydrogen bromide. See Hydrobromic acid under Bromine.

chloride. See Hydrochloric under Chlorine.

fluoride. See Hydrofluoric acid under Fluorine.

peroxide, reducing action of (KLEINstück), A., ii, 106.

reduction of carbon dioxide by (W1s-LICENUS), A., i, 472.

Hydrogen peroxide, action of iodine and, on alkali and alkaline earth hydroxides (Broeksmit), A., ii,

> action of, on lead salts (ZOTIER), A., ii, 18.

reaction of ozone with (ROTHMUND and Burgstaller), A., ii, 16. neutralisation of sodium borate

with (CAMBE and DIACONO), A., ii, 368.

use of, as a reagent in the purine group (VENABLE), A., i, 409; (Moore and Thomas), A., i,

detection of, by formation of dihydroxytartaric acid (Deniges), A., ii, 21.

estimation of minute quantities of, in presence of nitrites (QUARTA-ROLI), A., ii, 452.

selenide, detection of, in rain and snow (Gassmann), A., ii, 309.

sulphide, dissociation of (RANDALL and v. Bichowsky), A., ii, 159.

action of mercuric bromide with (Francheschi), A., ii, 365.

generator for (Munn), A., ii, 108; (SATTLER), A., ii, 165; (ERNEST), A., ii, 396.

automatic stopcock for (CLASSEN), A., ii, 108.

Hydrogen electrode. See Electrode. Hydrogenated compounds, preparation VORM. (FARBENFABRIKEN BAYER & Co., A., i, 494, 534.

Hydrokephalin, preparation of (Levene and WEST), A., i, 421.

Hydrolecithin, preparation of (LEVENE and West), A., i, 98.

Hydroscopoline, preparation of, and its chloride hydrochloride (HESS), A., i,

α-Hydroxy-acids, optically active, in-fluence of inorganic haloids on the rotation of (CLOUGH), T., 526; A., ii, 255. rotation of amides of (Hudson),

A., i, 292.

and their racemates, influence of boric acid on the conductivity of (Böeseken and van der Ent), A., ii, 147.

Hydroxyazo-compounds, electrolytic reduction of (Puxeddu), A., i, 551.

Hydroxy-ketone, C₁₀H₁₆O₂ and its semicarbazone (WALLACH and WOODMAN), A., i, 441.

ydroxylamine compounds platinum salts (TSCHUGAEV TSCHERNJAEV), T., 884. Hydroxylamine with Hymenodyctyon excelsum, constituents of the bark of (GIBSON and SIMONSEN), A., i, 151.

Hypochlorites. See under Chlorine.

Hypoiodites. See under Iodine.

Hypophosphates and Hypophosphoric acid. See under Phosphorus. Hypoxanthine phosphotungstate (DRUM-

mond), A., i, 337.

Hyssopin, found in hyssop killed by fungus (Tunmann), A., i, 332.

I.

Ice, crystallography of (RINNE), A., ii, 75.

Ignition of gaseous mixtures (McDavid), A., ii, 10.

of mixtures of methane and air (Mason and Wheeler), T., 45; A., ii, 10, 70; (PAYMAN and WHEELER), T., 656; A., ii, 356; (WHEELER), T., 840.

Ilsemannite, estimation of molybdenum in (Yancey), A., ii, 372.

 β -Iminoazolylethylamine phosphotungstate (Drummond), A., i, 337.

Iminodiacetanilide, and its salts and derivatives (Dubsky and Gräna-CHER), A., i, 188.

Iminodiacetanilide, nitroso- (Curtius and Hofmann), A., i, 294.

Iminodiacetic acid, azide and hydrazide of, and nitroso-, ethyl ester, and their derivatives (Curtius and Hofmann), A., i, 293.

and nitro-, and nitroso-, metallic salts (Dubsky and Spritzmann), A., i, 102, 103.

methyl ester, action of aniline on (Dubsky and Gränacher), A., i,

Iminodiacetonitrile, conversion methyleneaminoacetonitrile into (Bailey and Lochte), A., i, 60.

Iminodiacetotetranitroanilide, nitro-(DUBSKY and GRÄNACHER), A., i,

 α -Imino- $\beta\beta$ -diphenyldipropionic (SENTER, DREW, and MARTIN), T. 161; A., i, 167.

Iminodipropionic acid, and copper salts (Dubsky and Spritzmann), A., i, 102.

Iminohydrins, constitution of (RULE), T., 3; A., i, 115.

a-Iminolævulic acid, ethyl ester (Mumm and Hüneke), A., i, 183.

Iminovioluric acid, and its salts and derivatives (Lifschitz and Kritz-MANN), A., i, 192.

Indene, condensation of, with ketones (THIELE and MERCK), A., i, 484. oxide (Böeseken and VAN Loon), A., i, 388.

4:3-Indeno-1:2-benzoquinone,7-hydroxy-(Robinson and Crabtree), T., 879.

Indicators, theory of (WHITE and ACREE), A., ii, 328.

absorption spectra of (TINGLE), A., ii, 236.

dissociation constants of, in presence of neutral salts (Kolthoff), A., ii,

in animal tissues (CROZIER), A., i,

end points of, in dilute sodium hypochlorite (CULLEN and AUSTIN), A., ii, 265.

for determination of the hydrion concentration of serum (Homer), A., i,

Indigotin, structure of the chromophore of (Herzog), A., i, 310.

estimation of (Heinisch), A., ii,

Indole, estimation of, in fæces (Ber-GEIM), A., ii, 23.

Indole-ethylamine phosphotungstate (DRUMMOND), A., i, 337.

Indolinones, Bz-hydroxy-. See Oxindoles, hydroxy-.

Inorganic compounds, relation of colour of, to their structure (v. Bichowsky), A., ii, 142.

Inositolphosphoric acid of food-stuffs (RATHER), A., i, 212.

Interferometer, application of, to gas analysis (SEIBERT and HARPSTER), A., ii, 367.

Intestine, stimulating constituent of extracts of (LE HEUX), A., i, 323. human, formation of phenol in, by

bacteria (RHEIN), A., i, 206.

Inulenin in the tubercles of asphodels (Couvreur), A., i, 366.

Inulin, formation of, in plants (Colin), A., i, 151.

transformations of, in the Jerusalem artichoke (Colin), A., i, 208.

degradation of, in chicory root (Ges-LIN and WOLFF), A., i, 246.

Invertase in serum (Boissevain), A., i, 321.

extraction of, from yeast (Buchner and REISCHLE), A., i, 54.

Iodic acid. See under Iodine.

Iodine, resonance spectra of (WOOD), A., ii, 90; (Wood and KIMURA), A., ii, 91.

solubility of, in various solvents (HIL-DEBRAND, ELLEFSON and BEEBE), A., i, 62.

Iodine, equilibrium of sulphur and of selenium with (BECKMANN and PLATZMANN), A., ii, 229. purification of (LENCI), A., ii, 360.

action of hydrogen peroxide and, on alkali and alkaline earth hydroxides (Broeksmit), A., ii, 16.

action of sodium sulphide with (EHR-LICH), A., ii, 125.

compound of starch with (BERCZEL-

LER), A., i, 101. recovery of, from residues (STEPHENson), A., ii, 192.

Iodides, detection of, in presence of cyanides (Curtman and Kaufman), A., ii, 272.

estimation of, in presence of bromides and chlorides (WINKLER), A., ii, 237.

Iodic acid, detection and estimation of, in presence of hydrobromic, hydrochloric and hydriodic acids (Purgotti), A., ii, 451.

Iodates, estimation of, in presence of bromates (RUPP), A., ii, 126.

estimation of, in presence of hypoiodites (RUPP), A., ii, 125.

Hypoiodites, estimation of, in presence of iodates (RUPP), A., ii, 125.

Iodine detection and estimation:detection of chlorine in (PINKHOF), A., ii, 172.

estimation of, volumetrically (TARU-GI), A., ii, 203.

Iodoform, effect of light on (COMAN-DUCCI and MEDURI), A., i, 521.

solubility of, in glycerol (CHIARIA), A., i, 97.

Iodotannic reagent (TSAKALOTOS and Dalmas), A., ii, 454.

Ions, charge and dimensions of (v. HEVESY), A., ii, 51.

calculation of the normal potential of (HERZFELD), A., ii, 289.

Ionisation, chemistry of (HANTZSCH), A., ii, 299.

of electrolytes (MILNER), A., ii, 54,148. and electromotive force of electrolytes (LINHART), A., ii, 28.

of gases during interaction (PINKUS), A., ii, 286.

in solutions (KENDALL and Booge), A., ii, 37.

of organic acids of the paraffin series in relation to their structure (DE-RICK and Hess), A., i, 211.

Ionisation potential, relation between emission spectra and (HARDTKE), A., ii, 385.

Ipecacuanha alkaloids (PYMAN), T., 222; A., i, 267; (WALTERS, BAKER and Koch), A., i, 92.

Iridium, K-spectra of (LILIENFELD and SEEMANN), A., ii, 383.

Iridi- and Irido- chlorides, hydrated, dehydration of (Delépine and Boussi), A., ii, 322.

Iron, flame and furnace spectra of (HEM-SALECH), A., ii, 341.

line spectrum of (HEMSALECH), A., ii, 384.

electrolytic deposition of (KREMANN and BREYMESSER), A., ii, 57.

transformations of, at high temperatures (HONDA; BROOKE and HUNTING), A., ii, 115.

equilibria in the reduction and cementation of (SCHENCK), A., ii, 355.

corrosion of, by water, influence of calcium sulphate on (MEDINGER), A., ii, 166.

resistance limits of mixed crystals of silicon and vanadium with (TAM-MANN), A., ii, 235.

action of selenic acid on (TUTTON), A., ii, 193.

meteoric. See Meteoric iron.

Iron alloys with carbon (RUER and GOERENS), A., ii, 399.

with nickel, electrolytic deposition of (KREMANN and BREYMESSER), A., ii, 57.

Iron bases (ironammines), salts of, with organic acids (EPHRAIM and ROSENBERG), A., i, 391.

Iron nitride, synthesis of (MAXTED), A., ii, 196.

disulphide, preparation of (Rodt), A., ii, 443.

trisulphide (MECKLENBURG and RODT), A., ii, 167.

Ferric arsenate, peptisation of (Holmes and Arnold), A., ii, 317. hydroxide, solubility of, in water (Almkvist), A., ii, 320.

oxide, precipitation, stability and constitution of hydrates of (NEIDLE), A., ii, 45.

phosphate, peptisation of (Holmes and Arnold), A., ii, 317.

Ferrous carbonate, equilibrium in the system: carbon dioxide, water and (SMITH), A., ii, 261.

selenate, preparation of (TUTTON), A., ii, 193.

Steel, effect of heat treatment on the thermoelectric properties of (Campbell and Down), A., ii, 97. cooling and tempering of (Chevenard), A., ii, 202.

heterogeneity of (Le Chatelier and Bogitch), A., ii, 442.

detection of carbon in (WHITELEY), A., ii, 130.

Iron :-

Steel, estimation of manganese in (KELLEY, SPENCER, ILLING-WORTH, and GRAY), A., ii, 134. estimation of phosphorus in (CZAKO), A., ii, 173.

See also Manganese steel and Tungsten steel.

Iron detection, estimation, and separation:—

detection of, biologically (BEYER-INCK), A., i, 470.

estimation of, in presence of copper (LEY), A., ii, 21.

estimation of, volumetrically, using silver as reducing agent (EDGAR and KEMP), A., ii, 242.

estimation of, in ferrum reductum (EBERHARD), A., ii, 48.

estimation of, in small quantities of blood (BERMAN), A., ii, 371.

estimation of, in lactic acid (HARVEY), A., ii, 242.

ferric, estimation of, volumetrically (BRANDT), A., ii, 409.

estimation of phosphorus in (CZAKO), A., ii, 173.

galvanised, estimation of zinc in (BAUER), A., ii, 132.

separation of (Scheringa; Winder-Lich), A., ii, 409.

separation of, from the cerite metals in presence of calcium (Wöber), A., ii, 243.

separation of aluminium, manganese, titanium, zirconium and (Brown), A., ii, 84.

Iron-manganese ores from Roumania (BUTUREANU), A., ii, 324.

Isaac of Holland. See Hollandus.

Isatin, preparation of condensation products of ketones with (CHEMISCHE FABRIK AUF AKTIEN VORM. E. SCHERING), A., i, 272.

acetyl and benzenesulphonyl derivatives of (Heller), A., i, 309.

α- and β-Isatinanilides, compounds of sulphazone with (HERZOG), A., i, 310. Isatin-1-carboxylic acid, esters of

(Heller), A., i, 309.

Isatin-1-glyoxylic acid, ethyl ester (Heller), A., i, 310.

Isatoic acids, preparation of (MARTINET), A., i, 345.

Isethionylalanine (SALKOWSKI), A., i, 156.

Isethionylglycine, and its copper salt (Salkowski), A., i, 156.

Isethionyl-leucine (Salkowski), A., i, 156.

Isomerides, estimation of the components in mixtures of (Nichols), A., i, 217.

Isomerism and polymorphism (Pfeiffer and KLINKERT), A., i, 344.

keto-enol (Dieckmann), A., i, 15. position, and optical activity (Cohen and DE PENNINGTON), T., 57; A., ii, 93.

Iso-piestic solutions. See Solutions. Isoprenedicarboxylic acid. See \$-Methylmuconic acid.

Isoprenelactonic acid. See &'-Methylmucolactonic acid.

Isopyrum fumarioides, hydrocyanic acid in (MIRANDE), A., i, 56.

Isotopes, spectra of (HARKINS and Aronberg), A., ii, 89.

Isotopic elements. See Elements.

J.

Jalapin, biological action of (HEINRICH), A., i, 467.

Jaundice, chemical diagnosis of, caused by picric acid (Ganassını), A., ii, 374. Jellies, rhythmic diffusion in (MOELLER), A., ii, 301, 392; (Holmes), A., ii, 392.

formed by colouring matters (HAL-LER), A., ii, 189.

ĸ.

Kephalin (LEVENE and WEST), A., i,

Ketens, spectrochemistry of (v. Auwers), A., ii, 342.

3-Keto-2-benzylidene-5-methyl-2:3-dihydroindole (JÖRLANDER), A., i, 21.

C₆H₁₁O₂Cl, Ketochlorohydrin, from mesityl oxide and hypochlorous acid (Slawiński), A., i, 481.

4-Keto-3:4-dihydro-1:2-benzopyrone. See

Coumarins, hydroxy-.

Ketodihydroberberidene, and its semicarbazone (Perkin), T., 763.

ε-Keto-βζ-dimethyloctoic acid, and its silver salt and semicarbazone (WAL-LACH and GROTE), A., i, 442.

 γ -Keto- α -hydroxy- α -phenyl- γ -p-acetyl- γ aminophenylpropane, \$\beta\$-chloro- (J\beta R-LANDER), A., i, 22.

Ketol, C₈H₁₂O₂, from 1:3-dimethylcyclohexan-5-one (WALLACH, GERHARDT,

and Jessen), A., i, 443. Ketone, C₆H₉OCl, from mesityl oxide, hypochlorous acid and acetic anhydride (Slawiński), A., i, 481.

 $C_{10}H_{16}O$, and its derivatives, from Artemisia annua (ASAHINA and YOSHI-

томі), А., і, 76.

C₂₆H₄₄O, from sitostandicarboxylic acid and acetic anhydride (WINDAUS and RAHLÉN), A., i, 388.

Ketones containing conjugated carbonyl groups, spectrochemistry of (v. Auwers), A., ii, 341.

condensation of indene with (THIELE

and Merck), A., i, 484.

preparation of condensation products of isatin with (CHEMISCHE FABRIK AUF AKTIEN VORM. E. SCHERING), A., i, 272.

action of sodium acetylide on (HESS and Munderlon), A., i, 291.

hexacyclic, conversion of, into cyclopentanones (WALLACH, GERHARDT, and JESSEN), A., i, 442.

hydroaromatic, preparation of anils of

(REDDELIEN), A., i, 117.

phenolic, variation of the taste of, with constitution (Nomura and Nozawa), A., i, 438.

in the thiophen series, synthesis of (THOMAS and COUDERC), A., i, 401.

unsaturated, additive compounds of, with mercuric chloride (STRAUS and Blankenhorn), A., i, 501. action of phosphorus trichloride on

(CONANT), Å., i, 74.

Ketones, hexacyclic, dibromo-, reactions

of (Wallach), A., i, 440.

Ketonic acid, C₁₀H₁₄O₃, and its derivatives, from 1:2-dibromomenthone (WALLACH and HALLSTEIN), A., i, 442.

a-Ketonic acids, semicarbazones of (Bou-

GAULT), A., i, 17. **Keto-oxide**, C₆H₁₀O₂, and its derivatives, from mesityl oxide and hypochlorous acid (Slawiński), A., i, 481.

Ketoses, detection of, by the Selivanov reaction (WEEHUIZEN), A., ii, 279. Ketotetrahydronaphthasultam. See 1:8-

Naphthasultam-4-quinone.

Ketoximes, methyl ethers of (SEMPER and LICHTENSTADT), A., i, 437.

Kinetics, chemical (PRATOLONGO), A., ii, 70.

of reactions with electrolytes (WEG-SCHEIDER), A., ii, 349.

theory of dilute solutions (SHORTER; TINKER), A., ii, 9.

Kynurenic acid, formation of, from tryptophan, in the animal organism (MATSUOKA), A., i, 467.

L.

Lacquer poisoning. See Poisoning. Lactic acid, formation of, in fermentation (LEBEDEV), A., i, 149; (VAN DAM), A., i, 363. biochemical oxidation of (MAZÉ and Ruor), A., i, 91.

Lactic acid in sour milk (VAN SLYKE and BAKER), A., i, 417.

detection of, with thiophen (FEARON), A., ii, 462.

estimation of (SZEBERÉNYI), A., ii, 138.

estimation of, in mixtures with acetic and formic acids (ONODERA), A., ii,

estimation of iron in (HARVEY), A., ii, 243.

estimation of lactide in (Thompson and Suzuki), A., ii, 249.

γ-Lactones, hydrolysis of, by nitric acid (Johansson and Sebelius), A., ii,

action of diamines on (BISTRYZCKI and SCHMUTZ), A., i, 452.

Lactonemalic acid, silver salt (HOLM-BERG), A., i, 524.

Lactose (SMITS and GILLIS), A., i, 101, 155.

formation of, from starch (RÖHMANN), A., i, 138.

nstitution of (HAWORTH LEITCH), T., 188; A., i, 213. constitution

constitution and detection of (VAN DER HAAR), A., i, 212. estimation of, in milk (Folin and

DENIS), A., ii, 208.

estimation of, colorimetrically, in milk (Pacini and Russell), A., ii,

estimation of, in presence of sucrose and invert-sugar (GROSSFELD), A., ii, 337.

2-Lactyl-1:4-dimethoxybenzene AUWERS and MÜLLER), A., i, 30.

m-Lactyl-p-methoxytoluene (v. Auwers and MULLER), A., i, 28.

evulose (d-fructose; fruit-sugar), penta-acetates (JAEGER), A., i, 6. Lævulose

Lævulosediphosphoric acid, conversion of, into the monophosphoric acid (Neuberg), A., i, 423.

Lake of Rockange, radioactivity of the mud from (Folmer and Blaauw), A., ii, 145.

Lard, detection of foreign fat in (STEWART), A., ii, 463.

Lead, quadrivalent, atomic dispersion and refraction of (GRÜTTNER and KRAUSE), A., ii, 382.

isotopes of (CLARKE), A., ii, 266; (Fajans), A., ii, 421.

spectra of (HARKINS and ARON-BERG), A., ii, 89.

refractive index and solubilities of nitrates of (Richards Schumb), А., ii, 422.

experiment to show the bright surface of, when pure (Genelin), A., ii, 438. Lead alloys with antimony, specific heat

of (DURRER), A., ii, 217. with silver and bismuth or gold (Сото). А., іі, 365.

with thallium, electrolytic potential of (Bekier), A., ii, 425.

Lead compounds (ZOTIER), A., ii, 18. Lead salts, action of hydrogen peroxide

on (Zotier), A., ii, 18. sub-bromide and Lead sub-chloride (DENHAM), T., 249; A., ii, 200.

chloride, equilibrium of lead phosphate and (AMADORI), A., ii, 365.

chromate and asbestos (BINDER), A., ii, 453.

fluoride, equilibrium of lead phosphate and (Amadori), A., ii, 365.

monoxide (litharge; massicot), mineral modifications of (LARSEN; WHERRY), A., ii, 118.

peroxide and asbestos (BINDER), A., ii,

phosphate, equilibrium of lead chloride and fluoride with (AMADORI), A., ii,

sulphide, specific heat of (EASTMAN and Rodebush), A., ii, 149.

Lead organic compounds, reactivity of (Jones and Werner), A., i, 483.

Lead detection, estimation, and separa-

detection and estimation of, in water (Meldrum), A., ii, 83. estimation of, volumetrically (LINDT),

A., ii, 242. estimation of, volumetrically, in tin

plate (Deininger), A., ii, 455. estimation of, and its separation from

antimony (VORTMANN and BADER), A., ii, 132.

Lead electrode. See Electrode.

Leaves, red colour of, when treated with nitric acid in the xanthoproteic test (GERTZ), A., i, 56.

green, assimilation of nitrites by, in

sunlight (MOORE), A., i, 365.
Lecithin (LEVENE and WEST), A., i, 288. Lectures, delivered before the Chemical Society (STRUTT), T., 200; A., ii, 195; (MIERS), T., 363; A., ii, 235; (Brown), T., 559; A., ii, 299.

Lecture experiments, simplification of well-known (GENELIN), A., ii, 437. on the preparation of argon (Joris-

sen), A., ii, 74. to show the velocity of explosion of mercury fulminate (MITTAG), A., ii,

438. to demonstrate the law of multiple proportions (EMICH), A., ii, 228.

for the preparation of o-nitrosophenol (BAUDISCH), A., i, 496.

Lecture experiments with silver acetylide (Eggert and Schimank), A., ii, 228.

on the vapour pressure of solutions (VAN KLOOSTER), A., ii, 74.

Legumes, methylpentosans in (Oshima and Kondó), A., i, 419.

Legumin, preparation of, from peas (HAMMARSTEN), A., i, 509.

action of enzymes on (HAMMARSTEN), A., i, 510.

Lemongrass oil, Formosan, constituents of (KAFAKU), A., i, 76.

Lemon juice, antiscorbutic properties of (HARDEN and ZILVA), A., i, 562.

Lenzites sepiaria, constituents of (Zell-NER), A., i, 55.

Lichenase, occurrence of, in the digestive tract of invertebrates (JEWELL and Lewis), A., i, 138.

Liebigite, probable identity of uranothallite and (LARSEN), A., ii, 120.

Light, scattering of, in hydrogen, nitrogen, and oxygen (Born), A., ii, 281.

absorption of, and size of particles in disperse systems (PIHLBLAD), A., ii, 418.

by solutions (HANTZSCH), A., ii, 2. theory of the biochemical action of (Neuberg and Schwarz), A., i, 140.

action of, on crystals (Weigert), A.,

on mixtures of chlorine and hydrogen (PADOA and BUTIRONI), A., ii, 345.

on organic compounds (Moore and Webster), A., ii, 211.

first discovery of, on silver salts (BORUTTAU), A., ii, 345.

ultra-violet, possible origin of toxicity of (HARRIS and HOYT), A., i, 140. action of, on chloroform (KAILAN), A., i, 209.

Lignin (Hönig and Spitzer), A., i, 375. om pine-wood, constituents (Klason), A., i, 59.

Lignocellulose, detection of (Jentsch), A., ii, 248.

Lignoceric acid from paraffin wax (BERG-MANN), A., i, 285.

Lignosulphonic acids SPITZER), A., i, 375. (Hönig and

Lime. See Calcium oxide.

Lime-sulphur liquids, composition of (WINTER), A., ii, 364.

Linamarin, synthesis of, and its tetra-(FISCHER acetyl derivative ANGER), A., i, 526.

Linoleic acid, cerous salt (MORRELL), T., 117; A., i, 98.

Linolenic acid, cerous salt (MORRELL), T., 119; A., i, 98.

Lipase, action of ethyl alcohol and acetone on (KITA and OSUMI), A.,

ricinus, action of acids on (KITA), A., i. 274.

hydrolysis of oils by (TANAKA), A., i, 354.

Lipoidase (FIESSINGER and CLOGNE), A., i, 50.

Lipoids, influence of, on velocity of reaction (SIEGFRIED), A., ii, 223.

Liquids, physical properties of (HERZ),

calculation of the physical properties of, and their vapours (GEISSLER), A., ii, 220.

electric double refraction in (BERG-

HOLM), A., ii, 209. relation between temperature and molecular surface energy of (JAEGER), Λ, ii, 33.

structure of the capillary layer of (BAKKER), A., ii, 151.

velocity of capillary ascension (Lucas), A., ii, 391.

vapour pressure of (ARIES), A., ii, 61, 186.

solution of gases in (MICHAUD), A., ii, 293.

anisotropic, structure in steps of (Grandjean), A., ii, 65.

diffusion in (SVEDBERG), A., ii, 187. and isotropic, optical rotatory power of (BORN), A., ii, 283.

binary mixed, electrical double refraction in (Bergholm), A., ii, 6.

diatomic, vapour pressure of (ARIÈS), A., ii, 151.

mixed, properties of (Morgan and GRIGGS), A., ii, 38; (MORGAN and SCARLETT), A., ii, 39.

magnetic susceptibility of (A. and A. W. SMITH), A., ii, 388.

surface tension of (BERCZELLER), A., ii, 390. fluidity and specific volume of

(Herz), A., ii, 389. analysis of, by graphic methods (Gradenwitz), A., ii, 245.

ternary mixed, solubility in (HOLMES),

T., 263; A., ii, 188. volatile, viscosity of (LIDSTONE), A.,

ii, 221.

estimation of the vapours of, in gases (H. S. and M. D. DAVIS), A., ii, 410.

Liquid state, region of existence of (HERZ), A., ii, 151, 292; (MEYER), A., ii, 292.

Litharge. See Lead monoxide.

Lithargite (WHERRY), A., ii, 118. Lithium in volcanic deposits (BRUN), A., ii, 323.

Lithium chloride, electromotive force and free energy of dilution of (Pearce and Mortimer), A., ii, 147.

osmotic pressure of, in pyridine (KOENIG), A., ii, 432.

equilibrium of copper chloride, water and (Schreinemakers and Noorduyn), A., ii, 113.

sulphate, effect of lithium chloride on the solubility of, in water (SCHREINE-MAKERS and KAYSER), A., ii, 112.

Liver, carbohydrate metabolism in (ABELIN and DE CORRAL), A., i, 53. conjugation of hippuric acid in (LACKNER, LEVINSON, and MORSE), A., i, 278.

Loganberry, constituents of the juice of (DAUGHTERS), A., i, 152.

Lucerne hay, isolation and identification of stachydrin in (STEENBOCK), A., i, 476.

Lucianite, a magnesian clay from Mexico (HILGARD), A., ii, 123.

Luciferin, synthesis of (Dubois), A., i, 242.

Luminescence, faint, determination of the colour of (Weiser), A., ii, 283.

Lungs, amount of ethyl alcohol taken up by (LOEWY and V. DER HEIDE), A., i, 326.

2:6-Lutidine. See 2:6-Dimethylpyridine.
2:4-Lutidinetricarboxylic acid. See 2:4-Dimethylpyridine-3:5:6-tricarboxylic acid.

Lymph, amino-acids and dextrose in (HENDRIX and SWEET), A., i, 137. preparation of nucleic acid from (NAKASAKO), A., i, 274.

Lysalbic acid, distribution of nitrogen in (Kennedy and Gortner), A., i, 83

Lysine phosphotungstate (DRUMMOND), A., i, 336.

M.

Mackensite (KRETSCHMER), A., ii, 171. Magnesite, analysis of (MACRI), A., ii,

Magnesium, specific heat of (EASTMAN and RODEBUSH), A., ii, 149. metabolism. See Metabolism.

Magnesium chloride, action of alkali phosphates with (BALAREFF), A., ii, 266.

oxide (magnesia), equilibrium of alumina, silica and (RANKIN and MERWIN), A., ii, 199.

CXIV. ii.

Magnesium oxide, influence of the temperature of ignition on the rate of hydration of (CAMPBELL), A., ii, 364.

estimation of, in water (MONHAUPT), A., ii, 335.

Magnesium organic compounds :-

diethyl phosphite (MILOBENDZKI and KNOLL), A., i, 522.

Magnesium, estimation of (WINKLER), A., ii, 455.

estimation of, as oxalate (ASTRUC and CAMO), A., ii, 275.

estimation of, in blood-serum (MAR-RIOTT and HOWLAND), A., ii, 21.

Magnetic susceptibility (LORING), A., ii, 291.

of mixed liquids (A. and A. W. SMITH), A., ii, 388. of solutions (QUARTAROLI), A., ii, 426.

Magneto-chemistry, and its analytical applications (QUARTAROLI), A., ii, 458.

Magneton theory, and the scattering of a-rays (Webster), A., ii, 144.

Maleinimide, oxime of, and its derivatives (Cusmano), A., i, 77.

Malic acid, detection of (BROEKSMIT), A., ii, 22.

estimation of, in presence of tartaric acid by an optical method (WILLAMAN), A., ii, 249.

Malonic acid, detection of (BOUGAULT), A., ii, 413.

Maltase, extraction of, from yeast (Buchner and Reischle), A., i, 54.
Maltobionic acid, preparation of, and

Maltobionic acid, preparation of, and its brucine salt (GLATTFELD and HANKE), A., i, 336.

Maltose, oxidation of (GLATTFELD and HANKE), A., i, 336.

Mandelamide, p-chloro-, and its amidine salts (Rule), T., 17.

Mandelic acid, mandelamidine salt. See Mandeliminehydrin.

Mandeliminohydrin aud p-chloro- (MACKENZIE), T., 1; A., i, 115; (RULE), T., 12; A., i, 115.

Manganese, position of, in the periodic system (v. Bichowsky), A., ii, 316. magnetic properties of (Hadfield, Chéneveau, and Géneau), A., ii,

in drugs from plants (WESTMAN and ROWAT), A., i, 246.

Manganese bases (manganeseammines), salts of, with organic acids (EPHRAIM and ROSENBERG), A., i, 390.

Manganese hydroxide, solubility of, in water (ALMKVIST), A., ii, 320. sulphate, manurial experiments with (HILTNER and KORFF), A., i, 150.

30

Manganese detection, estimation and separation :--

of, detection microchemically (MENKE), A., ii, 371.

of, estimation colorimetrically (WILLARD and GREATHOUSE), A., ii, 84.

estimation of, volumetrically (IBBOTSON), A., ii, 175.

estimation of, in aluminium alloys (CLENNELL), A., ii, 176.

estimation of, in steel in presence of chromium and vanadium (Kelley, SPENCER. ILLINGWORTH, GRAY), A., ii, 134.

separation of aluminium, titanium, zirconium and (Brown), A., ii, 84.

Manganese-iron ores from Roumania (Butureanu), A., ii, 324.

Manganese steel, magnetic properties of (HADFIELD, CHÉNEVEAU, GÉNEAU), A., ii, 98.

Manganocalcite, columnar, from New Jersey (LEVISON), A., ii, 119.

Mannitol, decomposition of, by Bacillus coli communis (GREY), A., i, 143, 144.

conversion of, into methyl-a-pyran (WINDAUS and TOMICH), A., i, 545.

Mannose, toxicity of, towards green plants (KNUDSEN), A., i, 95.

Manurial experiments on the growth of plants (Funchess; Hiltner and Korff), A., i, 150.

Massicot. See Lead monoxide.

Matter, energy theory of the constitution of (VLIET), A., ii, 98; (RED-GROVE), A., ii, 152.

Meal-worms, influence of oxygen tension on metabolism of (GAARDER), A., i, 512.

Meat, digestion of the proteins of, by dogs with ligatured carotids (ZUNZ), A., i, 359.

Meerschaum \mathbf{from} Kraubat, Styria (LEITMAIER), A., ii, 170.

Melanophlogites, composition of (MANZELLA), A., ii, 235.

Melibiose, constitution of (HAWORTH and Leitch), T., 188; A., i, 213.

Melting-point determination, apparatus for (HIBBERT and THOMPSON), A., ii, 217.

Membranes, collodion, preparation of (FARMER), A., ii, 63. colloidal, properties and functions of

(TINKER), A., ii, 63. (WALLACH Menthane-2:4-diol

Pelikan), A., i, 446. \$\Delta^3\$-Menthen-2-ol (Wallach and Peli-KAN), A., i, 446.

Menthol, ultrafiltration of supersaturated solutions of (Berczeller), A., ii, 100.

Menthone, conversion of, into pulegenone (WALLACH and GROTE), A., i, 544.

monobromide (WALLACH and HALL-

STEIN), A., i, 442.
Menthoneanil (REDDELIEN), A., i, 117. Menthone-p-anisil (REDDELIEN), A., i,

Mercaptans, aromatic polyhydric (Pol.-LAK and Schadler), A., i, 497; (Pollak, v. Fiedler, and Roth), A., i, 498.

Mercury, critical constants of (ARIES), A., ii, 113.

critical temperature of (BENDER). A., ii, 429.

critical temperature and pressure of (VAN LAAR), A., ii, 8.

diffusion of the vapour of, in a vacuum (Guichard), A., ii, 9.

preparation of hydrosols of (Nord-LUND), A., ii, 267.

still for, made of silica-glass (Hoster-TER and Sosman), A., ii, 76.

Mercury salts, compounds of ammonia with (Holmes), T., 74; A., ii, 76.

Mercury bromide, ammoniacal pounds of cupric bromide and (Anderlini), A., ii, 44.

hydroxides, dissociation constants of (Kolthoff), A., ii, 18.

Mercuric bromide, action of hydrogen sulphide on(FRANCHESCHI), A., ii, 365.

chloride, additive compounds of unsaturated ketones with (STRAUS and Blankenhorn), A., i, 501.

ammonium chloride (white precipitate), preparation, properties and analysis of (Kolthoff), A., ii, 113.

oxide as a standard in alkalimetry (Rosenthaler), A., ii, 236; (Incze), A., ii, 271.

sulphide, solubility of, in hydriodic acid (GUTMANN), A., ii, 409.
Mercurous chloride (calomel) elec-

trode. See Electrode.

Mercury organic compounds, reactivity of (Jones and WERNER), A., i, 483. with acridine colouring matters (So-CIETY OF CHEMICAL INDUSTRY IN Basle), A., i, 306.

Mercury detection, estimation and separation :-

detection of, in urine (GUTMANN), A., ii, 409.

detection and estimation of, and its excretion in urine (DURET), A., i, 561.

Mercury detection, estimation and separation :-

estimation of, volumetrically (Votocek), A., ii, 238, 272.

estimation of, by means of zinc filings (François), A., ii, 276.

estimation of, in mercury fulminate (NICOLARDOT and BOUDET), A., ii, 134.

separation of copper and (VOTOČEK and PAZOUREK), A., ii, 455.

Mercury electrode. See Electrode.

Mesitylene, compound of hydrogen bromide with (MAASS and RUSSELL), A., i, 534.

Mesityl oxide, action of hypochlorous acid with (SLAWINSKI), A., i, 481. action of allyl bromide and zinc with (ENKLAAR), A., i, 154.

Mesitylyl a-chlorostyryl ketone (Jör-

LANDER), A., i, 21.

Mesothorium, life-period of (MEITNER), A., ii, 347.

ratio of, to thorium (McCoy and Henderson), A., ii, 422.

Metabolism, influence of oxygen tension

on (GAARDER), A., i, 512. changes in, induced by the injection of guanidine (WATANABE), A., i, 327.

arginine (Thompson), A., i, 88.

calcium (GIVENS), A., i, 321, 463.

carbohydrate (BENEDICT, OSTERBERG and Dudley; Benedict, OSTER-BERG and NEUWIRTH), A., i, 322. in the central nervous system (HIR-

SCHBERG and WINTERSTEIN), A., i, 52; (HIRSCHBERG), A., i, 416. in diabetes (McGuigan), A., i, 358. in the liver (ABELIN and DE COR-RAL), A., i, 53.

in relation to suprarenal glands (KURIYAMA), A., i, 324.

effect of thyroid-feeding on (KURI-YAMA), A., i, 139.

of glycine, in the animal organism

(LEWIS), A., i, 513. magnesium (GIVENS), A., i, 321, 463.

nitrogen, in the central nervous system (HIRSCHBERG and WINTERSTEIN), A., i, 416.

nuclein (THANNHAUSER and DORF-MÜLLER), A., i, 47, 513.

phosphorus, effect of, on the secretion of milk-fat (MEIGS and BLATHER-WICK), A., i, 276.

See Respiratory metarespiratory. bolism.

of sugar in the dog (CLARK), A, i,

of sulphur by bacteria (TANNER), A., i, 282.

Metabolism, uric acid (Lewis, Dunn, and Doisy), A., i, 277, 559; (Lewis and Doisy), A., i, 559.

Metachromatin (Guilliermond), A., i,

Metal ammonias (CHABLAY), A., i, 1. Metallic cyanates, hydrolysis of (WER-

NER), T., 84; A., i, 103. films, obtained by evaporation in vacuo (REINDERS and HAMBURGER), A.,

ii, 312. hydroxides, colloidal, adsorption of salts by, in analysis (SCHERINGA),

A., ii, 409. trinitrides, thermal decomposition of

(Нітен), А., іі, 398.

salts, canal , canal ray fluo (Оньох), А., ii, 285. fluorescence of

electrical conductivity of the vapours of (SCHMIDT), A., ii, 386.

freezing points of concentrated solutions of (Rodebush), A., ii,

double, condition of, in aqueous solution (TORRANCE and KNIGHT), A., ii, 299.

molecular weight of, in urethane

(BRUNI), A., ii, 432. measure of the antagonistic action of, on growth (OSTERHOUT), A., i, 331.

Metalloids, hydrides of (DE FORCRAND), A., ii, 107.

Metals, distribution of rarer, in plants and soils (Robinson, Steinkoenig, and MILLER), A., i, 331.

allotropy of, thermoelectric study of (Durrer), A., ii, 77.

electronic theory of (WEREIDE), A., ii, 288.

conductivity electrical of (Grü-NEISEN), A., ii, 287; (WEREIDE), A., ii, 288.

influence of pressure on the electrical conductivity of (BECKMAN), A., ii, 7.

entropy of (ALLEN), A., ii, 292.

effect of hydrostatic pressure on the physical properties of (JEFFRIES), A., ii, 113.

ductility of, and their position in the periodic system (TAMMANN), A., ii,

velocity of solution of, in acids (CENT-NERSZWER), A., ii, 162.

formation of filaments of, resembling organic growths (LILLIE), A., i, 278.

corrosion of, by water in presence of organic haloids (Doughty), A., i. 57.

colloidal. See Colloidal metals. Metals, heavy, detection of, with zinc sulphide wool fibres (CHAMOT and COLE), A., ii, 129.

liquid, vapour pressure of (HILDE-BRAND), A., ii, 61.

monatomic, atomic heat, volume elasticity and frequency of (BER-NOULLI), A., ii, 427.

powdered, fixation of, by organic extracts and proteins (Rebello-Alves and Benedicenti), A., i, 323.

qualitative analysis of (ALMKVIST), A., ii, 333; (SHIBKO; BOLIN and STARCK), A., ii, 334.

of the copper and arsenic groups, separation of (SNEED), A., ii, 133.

Metaphosphoric acid. See under Phosphorus.

Meta-saccharins and their salts, rotatory power of (HILL), A., ii, 210.

Metastannic acid. See under Tin.

Meteoric iron from Chili (BERWERTH), A., ii, 403.

Meteoric stones, analyses of (PRIOR), A., ii, 326, 327.

Meteorites, spectra of (CROOKES), A., ii, 25.

Methane, ignition of mixtures of air and
(MASON and WHEELER), T., 45; A., ii,
10, 70; (PAYMAN and WHEELER), T.,
666; A., ii, 356; (WHEELER), T., 840.

Methane, fluorotribromo and difluorodibromo (RATHSBURG), A., i, 333.

Methenic compounds, acid function in (Guinehant), A., i, 422.

Methinic compounds, acid function in (Guinchant), A., i, 422.

Methoxide, sodium, action of trichlorobenzenes with (Holleman), A., i, 216. Methoxyacetic acid, methoxyacetam-

idine salt (methoxyacetiminohydrin), (RULE), T., 9.

Methoxyacetimino-ethyl ether (RULE), T., 9.

Methoxyacetiminohydrin. See Methoxyacetic acid, methoxyacetamidine salt.
2. Methoxyacetophenone. 5-ω-dichloro-

2-Methoxyacetophenone, 5-ω-dichloro-(JÖRLANDER), A., i, 21.

2-Methoxyaniline, 4-(?)-iodo-, and its hydrochloride and acetyl derivative (DAINS, VAUGHAN, and JANNEY), A., i, 341.

p-Methoxyanilinomethyl hyposulphite (BINZ, HUETER, and GOLDENZWEIG), A. i. 6.

2'- and 3'-Methoxyanthraquinone-2:1acridones (Ullmann and Dootson), A., i, 190.

p-Methoxybenzimidoacetonitrile (SONN), A., i, 401.

2-Methoxybenzoic acid, 6-nitro- (Simonsen), T., 782; A., i, 542. 5-Methoxybenzonitrile, 3-nitro-4-hydroxy- (Borsche, Löwenstein, and QUAST), A., i, 12.

2-p-Methoxybenzoyl-1-acetyl-3-o-hydroxyphenylcyclopropane-1-carboxylic acid, ethyl ester (Widman), A., i, 393.

3-Methoxybenzoyl chloride, 5-nitro-4hydroxy- (v. Konek and Pacsu), A., i, 395.

γ-p-Methoxybenzoyl-α-o-hydroxyphenylpropane-ββ-dicarboxylic acid, α-hydroxy- (Widman), A., i, 394.

2-p-Methoxybenzoyl-3-o-hydroxyphenyl-cyclopropane-1:1-dicarboxylic lacid, ethyl ester (WIDMAN), A, i, 393.

3-p-Methoxybenzyl-1-benzylideneindene (THIELE and MERCK), A., i, 486.

3-p-Methoxybenzyl- $\omega\omega$ -dimethylbenz-fulvene (Thiele and Merck), A., i, 485.

p-Methoxybenzyldimethylethyl alcohol (HALLER and BAUER), A., i, 428.

3-p-Methoxybenzyl-1-furfurylideneindene (WÜEST), A., i, 490.

1-Methoxybenzylidene-3-isopropylindene (Thiele and Merck), A., i, 485.

p-Methoxybenzylisopropylindene (Thiele and Merck), A., i, 485.

4-Methoxy 2-α-chloropropionylphenol (v. Auwers and Müller), A., i, 30.

7-Methoxycoumarin (SONN), A., i, 32. 7-Methoxy-3:4-dihydro-1:2-benzopyrone, 4-imino- (SONN), A., i, 32.

p-Methoxy-p'-dimethylaminobenzophenone (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 228.

2-Methoxy-1:4-dimethylcoumarone (v. Auwers and Müller), A., i, 28.

5- and 7-Methoxy-3:3-dimethyloxindole, and their salts and derivatives (WAHL), A., i, 237.

2-Methoxydiphenylamine, 4:6-dinitro-(Borsche, Löwenstein, and Quast), A., i, 12.

7-Methoxy-2:4-diphenyl-1:4-benzopyranol, and its salts (Robinson and TURNER), T., 877.

5-Methoxy-2:3-diphenylquinoxaline, 7nitro- (Borsche, Lowenstein, and (QUAST), A., i, 12.

α-Methoxy-β-ethylbutan-β-ol (PALO-MAA), A., i, 522.

5-Methoxy-1 methylcoumaran-2-one, and its derivatives, and 1-bromo-, and 1-hydroxy- (v. Auwers and Müller), A., i, 30.

α-Methoxy-β-methylpropan-β-ol (PALO-MAA), A., i, 522.

2-Methoxy-6-naphthyl methyl sulphide (Zincke and Dereser), A., i, 221.

Methoxyphenanthraphenazines, hydroxy- (Pollecoff and Robinson), T., 651; A., i, 427.

- m-Methoxyphenol. See Resorcinol 1-methyl ether.
- 2-Methoxyphenyl carbonates, 5-monoand 3:5-di-nitro- (Pollecoff and Robinson), T., 648; A., i, 427.
- 2-Methoxyphenylacetic acid, 4:6-dinitro-, and its methyl ester (Borsche, Löwenstein, and Quast), A., i, 13.
- 4-Methoxy-2-phenyl-ψ-aziminobenzene, 6-nitro- (BORSCHE, LÖWENSTEIN, and QUAST), A., i, 13.
- 7-Methoxy-2-phenyl-1:4-benzopyranol anhydrohydrochloride (ROBINSON and TURNER), T., 877.
- 7-Methoxy-2-phenyl-1:4-benzopyrone (ROBINSON and TURNER), T., 876.
- 7-Methoxy-4-phenyl-1:2-benzopyrone (ROBINSON and TURNER), T., 875.
- 4-Methoxyphenyl bromomethyl ketone, 2-hydroxy- (Tambor and Du Bois), A., i, 395.
- 4-Methoxyphenyl chloromethyl ketone, 2-hydroxy- (TAMBOR and DU BOIS), A., i, 395.
- 4-p-Methoxyphenylcoumarin, 5:7-dihydroxy-, and its derivatives (SONN), A., i, 401.
- 4-Methoxyphenyl 3:4-dimethoxyphenylethyl ketone, 2-hydroxy- (CRABTREE and ROBINSON), T., 871.
- 2-Methoxy-o-phenylenediamine, 5-nitro-(Borsche, Löwenstein, and Quast), A., i, 12.
- 3-Methoxyphenylethyl methyl ketone, 2-hydroxy- (Nomura and Nozawa), A., i, 439.
- 4-Methoxyphenyl hydroxymethyl ketone, 2-hydroxy- (Tambor and Du Bois), A., i, 395.
- 4-Methoxyphenyl iodomethyl ketone, 2-hydroxy- (Tambor and Du Bois), A., i, 395.
- 2-Methoxyphenylmalonic acid, 4:6-dinitro-, ethyl ester (Borsche, Löwenstein, and Quast), A., i, 13.
- 4-Methoxyphenyl phenylethyl ketone, 2-hydroxy- (CRABTREE and ROBIN-SON), T., 870.
- p-Methoxyphenylpropionic acid, behaviour of, in the animal organism (MATSUO), A., i, 466.
- p-Methoxy-a-isopropylcinnamic acid (Schaarschmidt, Georgeacopol, and Herzenberg), A., i, 432.
- α-Methoxy-β-propylpentan-β-ol (PALO-MAA), A., i, 522.
- 2-γ-Methoxypropyltetrahydrofuran (HAMONET), A., i, 421.
- 4-(6-Methoxyquinolyl)-2(3:5-dimethyl-pyrryl)-carbinol (KARRER), A., i, 40.
- 4-(6-Methoxyquinolyl) 2-(3:5-dimethylpyrryl) ketone (KARRER), A., i, 39.

- 4-(6-Methoxyquinolyl)-2-pyrrylcarbinol (KARRER), A., i, 39.
- 4-(6-Methoxyquinolyl) 2-pyrryl ketone, and its derivatives (KARRER), A., i, 39.
- 3'-Methoxystilbene, 2-nitro-4-cyano-4'hydroxy-, and its acetate (Pfeiffer and Klinkert), A., i, 344.
- 4'-Methoxystilbene, 4-nitro-3-cyano-(PFEIFFER and KLINKERT), A., i, 344.
- 3-Methoxystyryl methyl ketone, 2-hydroxy- (Nomura and Nozawa), A., i, 439.
- 2- and 6-Methoxy-m-tolualdehyde, and 5-nitro-, and their derivatives (SIMON-SEN), T., 777; A., i, 541.
- 2- and 6-Methoxy-m-toluic acid, 5-nitro-, and their salts and derivatives (SIMON-SEN), T., 779; A., i, 541.
- Methoxytriphenylcarbinols, hydroxy-(GOMBERG and JOHNSON), A., i, 112.
- Methyl alcohol, pyrogenic decomposition of (PEYTRAL), A., i, 1.
- action of phosphoryl chloride on (BALAREFF), A., i, 97.
 - action of, on m-2-xylylhydroxylamine in presence of sulphuric acid (BAMBERGER), A., i, 341.
 - presence of, in foodstuffs, and its detection and estimation (v. Fellen-Berg), A., ii, 177.
- estimation of, in mixtures with ethyl alcohol (Toplis), A., ii, 460.
- Methyl groups attached to nitrogen, estimation of (Kossel and Edlbacher), A., i, 463; (Edlbacher), A., ii, 336.
- Methyl hyposulphite, amino- (BINZ, HUETER, and GOLDENZWEIG), A., i. 5.
 - hydroxy-(diformaldehydesulphoxylic acid) (BINZ, HUETER, and GOLD-ENZWEIG), A., i, 4; (BINZ), A., i, 291.
 - iodide, mobility of ions in vapour of (YEN), A., ii, 213.
 - relative activities of ethyl iodide, propyl iodide and, with sodium a and \(\theta\)-naphthoxides (Cox), T, 666: A. ii. 356.
 - 666; A., ii, 356. methoxymethyl hyposulphite, hydroxy- (BINZ, HUETER, and GOLDENZ-WEIG), A., i, 5.
 - sulphate, preparation of (BOAKE and DURRANS), A., i, 522.
 - hydrolysis of (KLEMENC and ED-HOFER), A., i. 220.
 - with sodium ethoxide or methoxide (Pollak and Baar), A., ii, 161.

- Methyl hydrogen sulphite, amino-, biochemical behaviour of (Salkowski), A., i, 514.
- Methylacetanilide, p-amino- (Morgan and Grist), T., 691; A., i, 450.
- 3-Methylacridine, 1-nitro- (MAYER and STEIN), A., i, 37.
- 3-Methylacridone, 1-nitro- (MAYER and STEIN), A., i, 37.
- **β-Methyladipic** acid, βγ-dibromo-(PAULY and WILL), A., i, 526.
- Methylamine, preparation of (Jones and Wheatley), A., i, 527.
- Methylaminobenzaldehyde, p-nitroso-(Klaus and Baudisch), A., i, 430.
- Methylaminobenzoic acid, p-nitroso-, methyl ester (Klaus and Baudisch), A., i, 430.
- Methylaminoethyl β-1-piperidinoethyl ether, β-cyano-, and its derivatives (v. Braun and Köhler), A., i, 268.
- a Methylaminoglyoxylic acid, ethyl ester dichlorophenylhydrazone (Bü-Low and Huss), A., i, 42.
- Methylaniline, catalytic preparation of (MAILHE and DE GODON), A., i, 217.
 - stanni- and stanno-chlorides (DRUCE), T., 716; A., i, 535.
- 2-Methylanthracene (Scholl and Lenko), A., i, 484.
- o-2-Methylanthraquinonylaminobenzaldehyde (MAYER and STEIN), A., i, 38.
- Methylarsine, dichloro-, action of magnesium and zinc on (ZAPPI), A., i, 483.
- Methylation with methyl sulphate (Klemenc and Edhofer), A., i, 220.
- 5-Methylazobenzene, nitronitroso-, derivatives of (GIUA), A., i, 552.
- 3-Methylbenzfulvene, and its picrate (WÜEST), A., i, 488.
- 8-Methylbenzidine, derivatives of (v. Braun and Mintz), A., i, 127.
- 3 Methyl-1:4-benzothiazine-2-carboxylic acid, 6-chloro-, ethyl ester (ZINCKE and BAEUMER), A., i, 539.
- Methylbenzoylcarbamide, amino-, chloroacetyl derivative (JACOBS and HEIDEL-BERGER), A., i, 70.
- p-Methylbenzylamine stannochloride (DRUCE), T., 718; A., i, 535.
- 3-p-Methylbenzyl-1-benzylideneindene (BERNTHSEN), A., i, 487.
- 3-p-Methylbenzyl-1-p-chlorobenzylideneindene (BERNTHSEN), A., i.
- Methylbenzyldimethylamine, o-hydroxy-, and its salts (v. Braun and Köhler), A., i, 186.

- o-, m-, and p-Methylbenzyldimethylethyl alcohols (HALLER and BAUER), A., i, 428.
- 3-p-Methylbenzylindene (BERNTHSEN), A., i, 487.
- Methylbenzylmethylethylamine, o-hydroxy-, and its platinichloride (v. Braun and Köhler), A., i, 186.
- Methylbenzyltrimethylamine, o-hydroxy-, sal's of (v. Braun and Köhler), A., i, 186.
- O-Methylepiberberine (PERKIN), T., 520; A., i, 349.
- ψ-Methylberberinium chloride and platinichloride (PERKIN), T., 750;
 A., i, 546.
- 2-Methylberberonic acid. See 2-Methylpyridine-3:4:6-tricarboxylic acid.
- Methyl-β-bromoethylaniline, and its derivatives and p-nitroso- (v. Braun, Heider, and Müller), A., i, 108.
- Methyl-8-bromoethyl-o-toluidine, and its salts (v. Braun, Heider, and Müller), A., i, 270.
- β-Methylbutane-αδ-dicarboxylic acid, βcyano-, ethyl ester (Ruzička), A., i, 22.
- β-Methylbutane-αβδ-tricarboxylic acid, ethyl ester (Ruzička), A., i, 23.
- β-Methyl-Δβ-butene-αδ-dicarboxylic acid, and its methyl ester (PAULY and WILL), A., i, 526.
- γ-Methylbutinene-γ-ol (Hess and Mun-DERLOH), A., i, 291.
- 4-Methyl-N-n-butyldiazoaminobenzene-4'-sulphonic acid, and its salts (REILLY and HICKINBOTTOM), T., 984.
- Methylcampholenic acid, and its amide and nitrile (HALLER and BAUER), A., i, 25.
- a-Methylcamphorcarbanilidoximes (HALLER and BAUER), A., i, 24.
- p-Methylcarbonatobenzaldehyde, and its phenylhydrazone (Rosenmund), A., i, 300.
- 4-Methyl-2 carboxybenzophenone, 4-dibromo. See p-Toluoylbenzoic acid, 2-ω-dibromo.
- des-N-Methylcevine, and its salts (FREUND and SCHWARZ), A., i, 304.
- B-Methylcinnamic acids, preparation of (IJINDENBAUM), A., i, 14.
- N-Methylconiine (v. Braun), A., i, 33.
- 4-Methylcoumaran-2-one, p-nitrophenyl-hydrazone (v. Auwers), A., i, 193.
- Methyldigalactoside (CUNNINGHAM), T., 602; A., i, 374.
- 1-Methyldihydroindole, methobromide of (v. Braun), A., i, 185.
- N-Methyldihydroisoindole, trihydrate of (v. Braun and Köhler), A., i, 186.

- 1-Methyl-1:4-dihydroquinolines, nitrocyano- (KAUFMANN), A., i, 187.
- Methyl-o-\(\textit{\textit{Braun}}\), and cyano-, and their salts (v. Braun), A., i, 185.
- Methyl-2:2'-dinaphthyl, 1:1'-dibromo-(Weitzenböck), A., i. 493.
- 1-Methyl-3:5-diisopropylbenzene (Schorger), A., i, 61.
- N-Methylemetine methiodides and methochlorides (PYMAN), T., 232.
- N-Methylisoemetine, and its methiodide (PYMAN), T., 228; A., i, 268.
- N-Methylisoemetinemethine, and its salts (PYMAN), T., 229; A., i, 268.
- Methylene iodide, action of, with ε-dimethylamino-Δα-pentene (VALEUR and LUCE), A., i, 102.
- Methyleneaminoacetonitrile, conversion of, into iminodiacetonitrile (BAILEY and LOCHTE), A., i, 60.
- Methylene blue, action of animal tissues with (Thunberg), A., i, 140. detection of, in urine (Tribondeau),
- A., ii, 416.
- Methylene-de-dimethylpiperidine iodide. See Dimethyliodomethyl- Δ^{δ} -pentenylammonium iodide.
- Methylenedi-β-naphthol, oxidation product of (Kohn and Ostersetzer), A., i, 501.
- 3:4 Methylenedioxybenzylmethyl-βhydroxyethylamine (ΚΑυΓΜΑΝΝ and DÜRST), A., i, 123.
- 3':4'-Methylenedioxy-2-phenyl-2:3-dihydro-1:4-a-naphthapyrone, and its piperonylidene derivative (CRABTREE and ROBINSON), T., 865.
- Methylenecyclohexanone, 2-hydroxy-, ethyl ester and acetate of (v. Auwers), A., ii, 382.
- Methylenepinacolin, hydroxy-, ethyl ester and acetate of (v. Auwers), A., ii, 382.
- w-Methyl-ω-ethylbenzfulvene, and its picrate (WÜEST), A., i, 491.
- 2-Methyl-3-ethyl-7-benzopyrone, bromoand chloro-derivatives (Simonis and Schuhmann), A., i, 27.
- Methylethylcampholic acid, and its amide (HALLER and LOUVRIER), A., i, 397.
- 4-Methyl-1-ethylcoumaran-2-one, and its derivatives, and 1-bromo-, and 1-hydroxy- (v. Auwers and Müller), A., i, 29.
- 2-Methyl-1-ethyl-1:2-dihydroquinoline, picrate, isomeric changes of (Heller), A., i, 306.
- s-Methylethylethylenediamine, and its salts (v. Braun, Heider, and Müller), A., i, 407.

- Methylethylhæmin, β-bromo- (Küster, Geering, and Kusch), A., i, 200.
- Methylethylpyridines, and their salts (ECKERT and LORIA), A., i, 79.
- Methyl-β-fenchocamphorol, and its derivatives (ΚοΜΡΡΑ and ROSCHIER), A., i, 445.
- Methylformanilide, p-amino-, and pnitro- (Morgan and Grist), T., 690; A., i, 450.
- β-Methylfructoside, preparation, structure and derivatives of (STEELE), T., 257; A., i. 253.
- Methylfurfuraldehyde, and 3-hydroxy-, absorption spectra of (Oshima and Tadokoro), A., ii, 255.
- γ-Methylgalactoside (Cunningham), T., 598; A., i, 374.
- n- and iso-Methylgranatolines, and their salts (WERNER), A., i, 267.
- α-Methylguanidinoglyoxylic acid (BAU-MANN and INGVALDSEN), A., i, 423.
- (-Methyl-Δα-heptene (Brooks and Humphrey), A., i, 287.
- 5-Methylhydrazobenzene, dinitro-derivatives (GIUA), A., i, 552.
- 2-Methylindole, 5:7-dichloro- (Bülow and Huss), A., i, 315.
- 5-Methylisatoic acid. See m-Tolylgly-oxylic acid, 6-amino-.
- 5-Methyl-1:7-α methyltrimethylenedioxindole-3-carboxylic acid, ethyl ester (MARTINET), A., i, 351.
- 5-Methyl-1:7-α-methyltrimethyleneisatin, and its derivatives (MARTINET), A., i, 351.
- β-Methylmucolactonic acid (PAULY and WILL), A., i, 525.
- B-Methylmuconamic acid, methyl ester (Pauly and Will), A., i, 525.
- 8-Methylmuconic acid, and its derivatives (PAULY and WILL), A., i, 525.
- 1-Methylnaphthalene, 2-iodo- (Scholl and Tritsch), A., i, 484.
- Methyl-α-naphthylamine, cyano- (v. Braun, Heider, and Müller), A., i, 271.
- Methylnorcamphor, and its semicarbazone (Ruzička), A., i, 23.
- Methylnorhomocamphoric acid, and its ethyl ester (Ruzička), A., i, 23.
- Methylolcarbamide, preparation of (DIXON), T., 246; A., i, 255.
- Methylisopelletierine, and its derivatives and isomerides (HESS and EICHEL), A., i, 35, 404.
- 1-Methylcyclopentan-3-one-1-carboxylic acid, and its ethyl ester and semi-carbazone (Ruzička), A., i, 23.

- Methyl-Δδ-pentenylamine, and its derivatives (v. Braun and Köhler), A., i, 163.
- Methyl-Δδ-pentenylcyanamide
 Braun and Köhler), A., i, 163.
- Methylpentosans in cereals and legumes (OSHIMA and KONDŌ), A., i, 419. detection of (OSHIMA and KONDŌ), A., ii, 338.
- 5-Methylphenazine, 3:7-diamino-, salts of (Kehrmann and Ramm), A., i, 313.
- 6-Methylphenazothionium, salts of, and their absorption spectra (KEHRMANN and SANDOZ), A., i, 126.
- 10-Methylphencyazonium salts (Kehr-Mann and Sandoz), A., i, 314.
- Methyl-\$\beta\$-phthalimidoethylaniline, and its methiodide (v. Braun, Heider, and Müller), A., i, 270.
- 1-Methylpiperidine-2- and -3-carboxylic acids, derivatives of (Hess and Leib-Brandt), A., i, 402.
- 1-Methyl-2-piperidylethyl ketone (Hess and Eighel), A., i, 35.
- a-1-Methylpiperidyl-2-propyl alcohol. See 1-Methylconhydrine.
- 4-Methyl-1-isopropylcoumaran-2-one, and its derivatives and 1-bromo-, and 1-hydroxy- (v. Auwers and Müller), A., i, 29.
- 1-Methyl-3-isopropylcyclopentane, 2amino-, and its derivatives(WALLACH), A., i, 429.
- Methylisopropyl- Δ^3 -cyclopenten-2-one. See Pulegenone.
- Methyl-a-pyran, formation of, from mannitol (WINDAUS and TOMICH), A., i, 545.
- 5-Methylpyrazole-4-carboxyanilide (DAINS and HARGER), A., i, 238.
- 5-Methylpyrazole-4-carboxylic acid, ethyl ester (DAINS and HARGER), A., i, 239.
- 5-Methylpyrazole-4-carboxy-o-phenetidide, and its hydrochloride (Dains and Harger), A., i, 238.
- 2-Methylpyridine-3:4-dicarboxylic acid, and its anhydride (Mumm and Hüneke), A., i, 184.
- 2- and 6-Methylpyridine-3:4:6-tricarboxylic acids (MUMM and HÜNEKE), A., i, 184.
- Methyltetragalactoside (CUNNINGHAM), T., 606; A., i, 374.
- Methyltetraglucoside (CUNNINGHAM), T., 606; A., i, 374.
- 1-Methyl-ac-tetrahydro-α-naphthol (v. Auwers), A., ii, 343.
- 4. Methyl-5:6:7:8-tetrahydro-α-naphthyl-dimethylamine, 4-hydroxy-, and its picrate (v. Braun, Arkuszewski, and Köhler), A., i, 258.

- 1-Methyltetrahydropyridinecarboxylic acids, synthesis of, and their derivatives (HESS and LEIBBRANDT), A., i, 401.
- 2-Methyltetrahydroisoquinoline ethiodide (v. Braun and Köhler), A., i, 186.
- Methyltetronamide(Hudson, Chernoff, and Wherry), A., i, 335.
- Methylthiocarbimide, equilibrium of methyl thiocyanate and (GILLIS), A., i, 157.
- α- and β-Methylthioglucosides, and their tetra-acetates (Schneider, Sepp, and STIEHLER), A., i, 253.
- 6-Methylthiol-8-naphthol, and 1:5dibromo- (ZINCKE and DERESER), A., i, 221.
- Methyltoluidines, catalytic preparation of (MAILHE and DE GODON), A., i. 218.

 Methyltrimaltoside (CHNNINGHAM) T
- Methyltrimaltoside (Cunningham), T., 607; A., i, 374.
- 1:2-(1'-Methyltrimethylene)-benziminazole, and its picrate (BISTRZYCKI and SCHMUTZ), A., i, 452.
- 5-Methyl-1:7-trimethylenedioxindole-3-carboxylic acid, ethyl ester (MAR-TINET), A., i, 351.
- 5-Methyl-1:7-trimethyleneisatin, and its derivatives (MARTINET), A., i, 351.
- β-Methyl-Δβ-undecene (Brooks and Humphrey), A., i, 288.
- Mica, adsorption of gases by (LANG-MUIR), A., ii, 430.
- Micosterol, C₃₀H₅₄O₃, from Elaphomyces hirtus (Issoglio), A., i, 476.
- Micro-balance, use of, in absolute determinations of mass (KRAMER), A., ii, 15.
- Microbes (micro-organisms), influence of dicyanodiamide on the growth of (MOLLER), A., i, 469.
- Microchemical notes (TUNMANN), A., ii,
- Micro-organisms. See Microbes.
- Milk, constituents of (OSBORNE, WAKE-MAN, LEAVENWORTH, and NOLAN), A., i, 203.
 - relation of proteins in diet to the production of (HART, HUMPHREY, and SMITH), A., i, 465.
 - cholesterol in (DENIS and MINOT), A., i, 561.
 - filtration of enzymes of (PICCARD and RISING), A., i, 466.
 - effect of phosphorus metabolism on the secretion of the fat of (MEIGS and BLATHERWICK), A. i, 276.
 - water-soluble vitamine in (OSBORNE, MENDEL, FERRY, and WAKEMAN), A. i. 360.
 - A., i, 360. cows', antiscorbutic value of (CHICK, Hume, and Skelton), A., i, 360.

Milk, cows, effect of heat on citric acid in, and its estimation (SOMMER and HART), A., i, 465.

proteins of (OSBORNE, WAKEMAN, LEAVENWORTH, and NOLAN), A., i, 141.

human, caseinogen from (Bosworth and Giblin), A., i, 417.

sour, free lactic acid in (VAN SLYKE and BAKER), A., i, 417.

reaction of (Szili), A., i, 203.

detection of sucrose in (Elsdon), A., ii, 412.

estimation of chlorine in (SIROT and JORET), A., ii, 237.

estimation of lactose in (Folin and Denis), A., ii, 208.

estimation of lactose in, colorimetrically (PACINI and RUSSELL), A., ii, 277.

Minerals, from Black Lake area, Quebec (Poitevin and Graham), A., ii, 325.

containing gold, from the Côte d'Ivoire

(Roux), A., ii, 203.

from Moravia and Austrian Silesia (KRETSCHMER), A., ii, 171.

from the Tatra Mountains (PAWLICA), A., ii, 80.

hydrothermal formation of (MÜLLER and KOENIGSBERGER), A., ii, 402.

and Koenigsberger), A., ii, 402. magnetic properties of (Stutzer, Gross, and Bornemann), A., ii, 216.

amorphous (Rogers), A., ii, 121.

radioactive. See Radioactive minerals. Mineralogy, old and new (MIERS), T., 363: A. ii 235.

363; A., ii, 235. Mirabilite from Michigan (Pech), A., ii, 120.

Molasses, nitrogenous pigments of (Friedrich; Stanek), A., i, 157.

Molecular association of compounds of carbon, hydrogen and oxygen (Jo-RISSEN), A., ii, 8.

attraction (MILLS), A., ii, 7.

theory of (ANTONOFF), A., ii, 437. frequency, relation of, to molecular number (ALLEN), A., ii, 163, 191, 225.

numbers (Allen), T., 389; A., ii, 220. relation of, to molecular frequency (Allen), A., ii, 163, 191, 225.

surface energy of liquids, effect of temperature on (JAEGER), A., ii, 33.

weights. See Weights, molecular.

Molybdenum, arc spectrum of (Puhl-Mann), A., ii, 142.

electrolytic potential of, and its electrolytic estimation (Wolf), A., ii, 350.

Molybdenum compounds, analysis of, by volatilisation in carbon tetrachloride vapour (JANNASCH and LAUBI), A., 459.

Molybdic acid, recovery of, after estimation of phosphoric acid (Lynas), A., ii, 365.

Molybdenum organic compounds (Mon-TEQUI DIAZ DE PLAZA), A., i, 249.

Molybdenum estimation and separation:—

estimation of (BINDER; STREBINGER), A., ii, 244.

estimation of, in ilsemannite (YAN-CEY), A., ii, 372.

separation of copper and (HOEPFNER and BINDER), A., ii, 372.

Morindone, and its constitution and derivatives (SIMONSEN), T., 766; A., i, 542.

Morphine, calcium derivative (RAKSHIT), T., 470: A., i. 350.

T., 470; A., i, 350. estimation of, in opium in presence of codeine (Annett and Singh), A., ii, 279.

Morphine alkaloids, constitution of (KAUFMANN and DÜRST), A., i, 122.

preparation of compounds of diallylbarbituric acid and (Society of Chemical Industry in Basle), A., i, 271.

Morphol. See Phenanthrene, 3:4-dihydroxy-.

Moulds, formation of soluble starch and of proteins by (Boas), A., i, 330.

Mowragenic acid, and its sodium salt

(SPIEGEL and MEYER), A., i, 302.

Mowrageninic acid (SPIEGEL and MEY-ER). A., i, 302.

Mowric acid. nitro-derivatives of (SPIE-GEL and MEYER), A., i, 303.

Mowrin, composition of (SPIEGEL and MEYER), A., i, 302.

Mucins (Levene and López-Suárez), A., i, 554.

Mucoids (Levene and López-Suárez), A, i, 554.

Muconic acid, excretion of, from the animal body (Mori), A., i, 466.

Mucor boulard, acids produced by (Bettinger and Delayalle), A., i, 330.

Mucosin (LEVENE and LÓPEZ-SUÁREZ), A., i, 554.

Mulberry, carbohydrates in leaves of (KAWASE), A., i, 476.

Mullanite (Shannon), A., ii, 117.

Multiple proportions, law of (BALA-REFF), A., ii, 15.

lecture experiments to demonstrate (EMICH), A., ii, 228.

Muscle, creatine in, in degeneration CATHCART, HENDERSON, Paton), A., i, 279.

guanidine content of, after removal of parathyroids (Henderson), A., i,

imbibition of water by, especially in presence of caffeine (Belák), A., i,

reactivation of yeast by extracts of (MEYERHOF), A., i, 242.

of, during work (Gold-BERGER), A., i, 203.

smooth, action of opium alkaloids on (MACHT), A., i, 418.

Mustard oils. See Allylthiocarbimide

and Thiocarbimides. Myrtle. See Vaccinius myrtillus.

N.

Naphthalene, heat of combustion of (SWIENTOSLAWSKI), A., ii, 32.

Naphthalene, B-chlorothiol-derivatives (ZINCKE and EISMAYER), A., i, 386.

Naphthalene-1-azo- $\alpha\alpha$ -dibenzoyl- β - $\Delta\alpha$ propenyl ether, 4-amino-, benzoyl derivative (DIMROTH, LEICHTLIN, and FRIEDEMANN), A., i, 129.

Naphthalene-1-azo-p-nitrophenyl ether, 4-amino-, benzoyl derivative (DIM-ROTH, LEICHTLIN, and FRIEDEMANN),

A., i, 129.

Naphthalene-1-azopentamethylphenyl ether, 4-amino, benzoyl derivative (DIMROTH, LEICHTLIN, and FRIEDE-MANN), A., i, 129.

Naphthalene-1-diazonium hydroxide, 4-amino-, benzoyl derivative, salts of (DIMROTH, LEICHTLIN, and FRIEDE-MANN), A., i, 129.

Naphthalenedicarboxylic acid, 1:5-dihydroxy- (v. HEMMELMAYR), A., i,

227.

Naphthalene-β-sulphonamide, α-cyano-(KALCHER), A., i, 433.

α-Naphthalenesulphonylhistidine, its naphthalenesulphonate (BAUMANN and Ingvaldsen), A., i, 455.

 ${\bf 2:1-Naphthalene sulphony lide} ({\tt ANSCHUTZ}$ and MAXIM), A., i, 426.

Naphthanthroxanic acid (MAYER and OPPENHEIMER), A., i, 339.

7:12-Naphthaphenoxazine, amino-derivatives, absorption spectra of (KEHRmann and Sandoz), A., ii, 344.

bromohydroxy-Naphthaquinones, (Wheeler and Edwards), A., i, 75.

o-2-Naphthaquinonylaminobenzoic acid, and its silver salt (Leśniański), A., i, 405.

1:8-Naphthasultam, amino- and nitroderivatives of (ZINCKE and SCHÜR-MANN), A., i, 550.

1:8-Naphthasultam-4-quinone. tetrachloro-, hydrolysis of (ZINCKE and Schürmann), A., i, 550.

a-Naphthisatoic acid.

See Naphthylβ-glyoxylic acid, α-amino-.

α- and β-Naphthoic acid, ammonium salts (McMaster and Wright), A., i, 263.

2-Naphthoic acid, 3-chloro-, methyl ester (Ullmann and Dootson), A., i, 191. a-Naphthoicsulphinide, and its sodium

salt and methyl derivative (KALCHER), A., i, 433.

β-Naphthol, ultrafiltration of supersaturated solutions of (Berczeller),

A., ii, 100.

B-Naphthol, 8-amino-, benzoyl derivative, and its chloro- and nitro-derivatives (Badische Anilin- & Soda-FABRIK), A., i, 273.

6-thiol-, and its diacetate (ZINCKE and

Dereser), A., i, 220.

Naphthols, effect of water on the action of aluminium with (SELIGMAN and Williams), A., i, 333.

β-Naphthol 6-methyl sulphide. See 6-Methylthiol-B naphthol.

8-Naphtholmethyl-6-sulphone and -sulphoxide (ZINCKE and DERESER), A., i, 221.

a-Naphtholphthalein, preparati (Werner), T., 20; A., i, 117. preparation

β-Naphthol-6-sulphinic acid (ZINCKE and DERESER), A., i, 221.

β-Naphthol-6-sulphonanilide (ZINCKE and Dereser), A., i, 221.

α-Naphthol-4- and -5-sulphonic acids, ammonium salts (McMaster and Wright), А., i, 263.

Naphtholsulphonic acids, hydroxyamino-, acetyl and naphthoyl derivatives of (CHEMISCHE FABRIK GRIESнеім-Еleкtron), А., і, 222.

2-Naphthol-1-sulphonyl chloride (AN-SCHUTZ and MAXIM), A., i, 426.

Naphthisooxadiazole, and its oxide, nitro-derivatives (GREEN and ROWE), T., 71; A., i, 128.

B-Naphthoxadiazole-4-sulphonic photolytic and photodynamic action of (Kögel), A., i, 515.

a-Naphthoxide, sodium, relative activity of alkyl iodides with, in methyl alcohol (Cox), T., 821.

a- and B-Naphthoxides, sodium, relative activities of alkyl iodides with (Cox), T., 666; A., ii, 356.

a-Naphthoxindole (MARTINET), A., i, 306.

- β-Naphthyl thiocyanate, 1-chloro-(ZINCKE and EISMAYER), A., i, 387.
- a- and \$\textit{\beta-Naphthyl}\$ sulphites (Badische Anilin- & Soda-Fabrik), A., i, 297.

 Naphthylacetic acids (Mayer and Op-

PENHEIMER), A., i, 339.

- β-Naphthyl acetonyl sulphide, 1-chloro-, and its hydrazone (ΖΙΝCKE and ΕΙSΜΑΥΕR), Α., i, 387.
- α-Naphthylamine hydrogen arsenate (Boon and OGILVIE), A., i, 461.
- **6-Naphthylamine**, sulphonation of (GREEN and VAKIL), T., 35; A., i, 110.
- α-Naphthylamine-4-sulphonic acid, ammonium salt (McMaster and Wright), A., i, 263.
- α-Naphthylamino-glyoxylic acids, ethyl ester dichlorophenylhydrazones (Bü-Low and Huss), A., i, 43.
- β-Naphthyl 2-amino-α-naphthyl sulphide, 1-chloro-, and its derivatives (ZINCKE and EISMAYER), A., i, 387.
- o-a-Naphthylbenzoic acid (SCHAARschmidt and Georgeacopol), A., i, 434.
- 1-α- and -β-Naphthyl-4-benzylmethyl pyrazolones, and their derivatives (v. KONEK and MITTERHAUSER), A., i, 408.
- d-α-Naphthylcarbamidopropionic acid (West), A., i, 311.
- Naphthyl 2:4-di-1'-chloro-β-naphthyl disulphide, 1-amino-, and its acetyl derivative (ΖΙΝΟΚΕ and ΕΙSMAYER), A., i, 387.
- 3:2-Naphthylenesulphonylide-1:6:7:1':-6':7'-hexasulphonic acid, and its sodium salt (Anschütz and Maxim), A., i, 426.
- Naphthyl-β-glyoxylic acid, α-amino-, and its salts (MARTINET), A., i, 345.
- 8-Naphthylguanidine (ARNDT and Rose-NAU), A., i, 40.
- β-Naphthyl 2- and 4-hydroxy-α-naphthyl sulphides, 1-chloro-, and their acetyl derivatives (ZINCKE and EISMAYER), A., i, 387.
- α- and β-Naphthylidides, 1-chloro-(ZINCKE and EISMAYER), A., i, 387.
- d- and dl-a-Naphthylmethylhydantoin (WEST), A., i, 311.
- 1-8-Naphthyl-3-methyl-4-isopropyl-5pyrazone, and its pierate (v. Konek and Mitterhauser), A., i, 408.
- 1-8-Naphthyl-3-methyl-5-pyrazolidone (v. Konek and Mitterhauser), A., i, 408.
- β-Naphthylsulphinic acid, 1-chloro-, and its methyl ester (ZINCKE and EIS-MAYER), A., i, 386,

- β-Naphthylsulphinous acid, 1-chloro-, methyl ester (ZINCKE and EISMAYER), A., i, 386.
- α- and β-Naphthyl thienyl ketones (Thomas and Couderc), A., i, 401.
- β-Naphthylthiolamine, 1-chloro-, and its benzylidene derivative (ZINCKE and EISMAYER), A., i, 386.
- β-Naphthylthiolanilide, 1-chloro-(ZINCKE and EISMAYER), A., i, 386.
- β-Naphthylthiolmethyl-amine and -imine, 1-chloro- (ZINCKE and EIS-MAYER), A., i, 386.
- β-Naphthylthiolmethyl methyl ketone. See β-Naphthyl acetonyl sulphide.
- β-Naphthylthiosulphoxylic acid, and its sodium salt (WHITE), T., 608; A., i, 387.
- α-Naphthyltrimethylammonium bromide (V. BRAUN, HEIDER, and MÜLLER), A., i, 271.
- Narcosis, respiration of oxygen during (v. Issekutz), A., i, 462.
- Narcotics, influence of temperature on the activity of (UNGER), A., i, 515.
 - effect of temperature on the capillary activity of (v. Issekuuz), A., i, 467. precipitation of proteins by (Meyerhof), A., i, 330.
 - action of potassium cyanide and, on water-fleas (Buytendyk), A., i,
- Narcotine, potassium and sodium derivatives (RAKSHIT), T., 467; A., i, 350.
- Nebulium, atomic weight of (Nicholson), A., ii, 182.
- Neon, compressibility and dilatability of (LEDUC), A., ii, 155.
 - vapour pressure of (CATH and ONNES), A., ii, 291.
- Nephelite, constitution of (Thugurr), A., ii, 449.
- Nervous system, central, carbohydrate and nitrogenous metabolism in (HIRSCHBERG and WINTERSTEIN; HIRSCHBERG), A., ii, 416.
 - metabolism of sugar in (HIRSCH-BERG and WINTERSTEIN), A., i, 52.
- Nessler solution, utilisation of residues of (CLIFFORD), A., ii. 314.
- of (CLIFFORD), A., ii, 314.

 Neutralisation, conductivity minimum in (TREADWELL), A., ii, 288.
- Neutral salt action in catalysis (HARNED), A, ii, 436.
- Nickel, arc spectrum of (Paulson), A., ii, 89.
 - electrochemical behaviour of (SMITS and DE BRUYN), A., ii, 54.
 - colloidal, preparation of (Kelber), A., ii, 19.

Nickel alloys with copper, potential of (GORDON and SMITH), A., ii, 183. with iron, electrolytic deposition of (KREMANN and BREYMESSER), A., ii, 57.

Nickel bases (nickelammines), salts of, with organic acids (EPHRAIM and Rosenberg), A., i, 390.

Nickel hydroxide, solubility of, in water (Almkvist), A., ii, 320. oxide, mixed crystals of, with other metallic oxides (HEDVALL), A., ii, 320,

Nickel detection, estimation and separation :-

detection of (AGRESTINI), A., ii, 455. estimation of, with a-benzildioxime (STREBINGER)), A., ii, 243.

estimation and separation of (CARмот)**, А**., іі, 133̀.

Nicotiana suaveolens, nicotine (PETRIE), A., i, 420.

Nicotine, extraction of, from aqueous solutions (DANGELMAJER), A., ii,

Nicotinic acid, derivatives of (WINTER-STEIN and WEINHAGEN), A., i, 35. phosphotungstate (DRUMMOND), A.,

Niton (radium emanation), measurement of, in the atmosphere (OLUJIC), A., ii, 420.

Nitrates and Nitric acid. See under Nitrogen.

Nitrides, preparation of (Vournasos), A., ii, 76. inorganic, decomposition of (Нітсн),

A., ii, 398.

Nitrification, effect of oxygen and carbon dioxide on (PLUMMER), A., i, 90.

C18H19O2N3, Nitrile, from phenetylthiocarbamide, lead carbonate, alcohol and potassium cyanate (Reutter), A., i, 496.

Nitriles, dynamics of the formation of (KREMANN and WENZING), A., ii,

catalytic preparation of (MAILHE; MAILHE and DE GODON), A., i,

from primary amines (MAILHE and DE GODON), A., i, 256.

preparation of, from secondary and tertiary amines (MAILHE), A., i, 336. preparation of, from acid chlorides (MAILHE), A., i, 532.

aromatic, catalytic preparation of

(MAILHE), A., i, 68, 389. conversion of, into esters (SPIEGEL and Szydlowsky), A., i, 216; (PFEIFFER), A., i, 389.

Nitrilotriacetic acid, copper (DUBSKY and SPRITZMANN), A., i,

azide and hydrazide of, and their derivatives (Currius and Hor-MANN), A., i, 295.

Nitrites. See under Nitrogen.

Nitroamines, action of o-chlorobenz-aldehyde on (MAYER and STEIN), A., i, 36.

Nitro compounds, aromatic (GIUA), A., i, 552.

reaction for (OLIVIER), A., i, 216. Nitrogen, constitution and rotatory power of (Sommerfeld), A., ii,

valency of (Wengel), A., ii, 17. active (STRUTT), T., 200; A., ii,

scattering of light in (BORN), A., ii,

mobility of ions in (YEN), A., ii,

quinquevalent, stereochemistry (Komatsu), A., i, 426.

effect of hydrogen chloride on the equilibrium of hydrogen and (Lun-LAM), A., ii, 67.

distribution of, in soils (Morrow and FETZER), A., i, 248.

Nitrogen trichloride, preparation (RAI), A., ii, 310.

oxides, reduction of, to ammonia (GUYE and SCHNEIDER), A., ii.

dioxide (nitric oxide), coefficient of magnetisation of (BAUER, WEISS, and Piccard), A., ii, 387.

velocity of oxidation of (Boden-STEIN, BRINER, and FRIDÖRI), A., ii, 302.

Nitric acid, electrolytic preparation of (TAYLOR, CAPPS, and COOLIDGE), A., ii, 196.

reduction of (GENELIN), A., ii, 437. estimation of, colorimetrically, with diphenylamine-sulphuric (TILLMANS), A., ii, 128.

apparatus for estimation of, by the Schulze-Tiemann method (Leuchs), A., ii, 240.

Nitrates, optical investigations on the constitution of (SCHAEFER), A., ii. 254.

reflection spectra of (Schaefer and SCHUBERT), A., ii, 282.

action of sunlight on (MOORE), A., i, 365.

assimilation of (BAUDISCH), A., i, 474.

detection of, in water (ESCAÏCH), A., ii, 273.

Nitrogen :-

Nitrates, estimation of (STRECKER), A., ii, 332.

estimation of, gasometrically(HILL), A., ii, 240.

presence of estimation of, in nitrites (OELSNER), A., ii, 405.

Nitrites, formation of, from nitrates in sunlight, and their assimilation by green leaves (MOORE), A., i, 365.

assimilation of (BAUDISCH), A., i, 474.

estimation of (STRECKER), A., ii, 332; (Dienert), A., ii, 370.

estimation of minute quantities of, in presence of hydrogen peroxide (Quartaroli), A., ii, 452.

estimation of, in presence of nitrates (OELSNER), A., ii, 405.

Nitrogen organic compounds, influence of structure on the ammonification of, in soils (MIYAKE), A., i, 91.

Nitrogen estimation :-

estimation of, by Kjeldahl's method (Brill and Agraoili), A., ii, 172; (Salm and Prager), A., ii, 173; (VILLIERS and MOREAU-TALON), A., ii, 331.

estimation of, by the Kjeldahl-Gunning method (Dowell and Friede-

MAN), A., ii, 369.

estimation of, in urine, by Kjeldahl's method (C. and M. OEHME), A., ii, 452.

estimation of, by the micro-Kjeldahl method (Kraemer), A., ii, 331.

estimation of, microchemically (SJOL-LEMA and HESSERSCHY), A., ii, 127; (BANG), A., ii, 369.

estimation of, in bacteria (BRADLEY

and Nichols), A., i, 281. estimation of various forms of, in beef (THRUN and TROWBRIDGE), A., i, 324.

estimation of, in blood (Donald; Okada), A., ii, 127; (Sjollema and HESSERSCHY), A., ii, 128.

estimation of, in calcium cyanamide (Turkus), A., ii, 127.

estimation of, in explosives (ODDO), A., ii, 48.

estimation of, in rain and snow

(PECK), A., i, 96. estimation of, in soil extracts and physiological fluids (DAVISSON), A., ii, 370.

estimation of, in urea, gasometrically (Renaud), A., ii, 405.

estimation of, in presence of mercury (François), A., ii, 271.

Nitrogen estimation:-

amino-, formation of foam during the estimation of, by van Slyke's method (MITCHELL and ECKSTEIN), A., ii, 173.

non-protein, estimation of, in blood (Greenwald), A., ii, 239.

residual, estimation of, microchemically (BANG), A., ii, 273. of, in blood-serum estimation

(FISCHER), A., ii, 452. Nitrometer, method of working with

(Kaesbohrer), A., ii, 273. Nitrosyl bromide, synthesis of (Moles),

A., ii, 230. velocity of formation of (Trautz and DALAL), A., ii, 162.

N-n-Nonoylcarbazole (Copisarow), T.,

Norcamphor, synthesis of (HINTIKKA and Komppa), A., i, 543.

Norcocaine, cyano- (v. Braun and MÜLLER), A., i, 234.

Norecgonidine, and its ethyl ester, and their salts and derivatives (v. Braun and MÜLLER), A., i, 234.

Novocaine, detection of (SANCHEZ), A., ii, 340.

Nucleic acid, preparation of, from lymph (Nakasako), A., i, 274. preparation and analysis of (CHAP-MAN), A., i, 354. metabolism. See Metabolism.

Nucleic acids, constitution of (FEUL-

GEN), A., i, 85, 413. preparation of, from plants (CLARKE and Schryver), A., i, 130.

estimation of purine bases in (FEUL-GEN), A., ii, 464.

Nutrition and diet (MENDEL and OSBORNE), A., i, 277; (OSBORNE, MENDEL, FERRY, and WAKEMAN), A., i, 323.

experiments on (MAIGNON; AMAR), A., i, 416.

effect of inorganic sulphates in (Daniels and Rich), A., i, 559.

Oats, manurial experiments on the growth of (HILTNER and Korff), A., i, 150. Obituary notices :-

Clayton Beadle, T., 306. Arthur Joseph Brearley, T., 300.
Bertram Haward Buttle, T., 300.
Norman Phillips Campbell, T., 302.
Alexander Macomb Chance, T., 307. John Joseph Eastick, T., 309. Edward William Lanchester Foxell, T., 303. Ernest George Hill, T., 310.

Obituary notices :-George Thomas Holloway, T., 313. Maurice Kemp-Welch, T., 303. Herbert King, T., 304. Edmund Albert Letts, T., 314. Peter MacEwan, T., 316. Ludwig Mond, T., 318. Benjamin Horatio Paul, T., 334. Leonard Ison Pitt, T., 305. Rufus Daniel Pullar, T., 336. William James Russell, T., 339. Francis Sutton, T., 350. William Henry Symons, T., 354. Arthur Edwin Tate, T., 306. Thomas Tyrer, T., 355. Reginald Cowdell Woodcock, T., 358. Philip John Worsley, T., 360.

Octahydroindole. See Perhydroindole. Octamethyl digalactose (CUNNINGHAM), T., 601; A., i, 374.

Octamethylnorscoparin (Herzig and TIRING), A., i, 504.

n-Octane, heat of combustion of (LA-GERLÖF), A., ii, 62.

isoOctene. See ζ-Methyl-Δa-heptene. Δα-Octenylarsinic acid, β-bromo- (FAR-BENFABRIKEN VORM. F. BAYER & Co.), A., i, 257.

Octinenebromoarsinic acid. See Aa-Octenylarsinic acid, \$\beta\$-bromo-.

Odour, influence of solubility on (BACKman), A., i, 88.

Œdema, biochemistry of (FEIGL), A., i,

Oils, occurrence of carotin in (GILL), A., i, 476.

hydrolysis of, by ricinus lipase (Ta-NAKA), A., i, 354.

estimation of the iodine number of (KELBER and RHEINHEIMER), A., ii,

drying (Morrell), T., 111; A., i, 98, 372.

essential. See Oils, vegetable.

ethereai. See Oils, vegetable. light, absorption of benzene by (H. S. and M. D. Davis), A., ii, 411.

vegetable, constituents of (SEMMLER and Liao), A., i, 25; (SEMMLER, Jonas, and Oelsner; Semmler, Jonas, and Roenisch), A., i, 118; (SEMMLER, JONAS, and

RICHTER), A., i, 301. and terpenes (WALLACH), A., i, 428; (WALLACH, WALTER, and WOLFF), A., i, 439; (WALLACH, GROTE, HALLSTEIN, JESSEN, and WOODMAN), A., i, 440; (WAL-LACH, GERHARDT, and JESSEN), A., i, 442; (WALLACH and STANDACHER), A., i, 444; (WAL-LACH and PELIKAN), A., i, 445.

Oil-water emulsions, stability of, in constricted tubes (SCHLAEPFER), T., 522; A., ii, 260; (HALL), A., ii, 10. Oleander, glucosides in the leaves of (STRAUB), A., i, 368.

Oleandrin (STRAUB), A., i, 368.

Olefines, action of sulphuric acid on (Brooks and Humphrey), A., i, 286. nephelometric value of

(Csonka), A., ii, 277. cerous salt (MORRELL), T., 117; A., i,

and its potassium salt, molecular condition of, in alcoholic (LAING), T., 435; A., i, 289.

sodium salt, absorption of hydrogen by (Anderson and Katz), A., ii, 128.

Oleum. See Sulphuric acid, fuming, under Sulphur.

Olive oil, influence of carbon monoxide on the rate of absorption of hydrogen by (MAXTED), A., ii, 72.

Occytase, properties and composition of (CLARK), A., i, 463.

Opal, fibrous (MERRILL), A., ii, 323. Opium, estimation of morphine in, in presence of codeine (ANNETT and SINGH), A., ii, 279.

Opium alkaloids, chemical structure and physiological action of (MACHT), A., i, 418, 515.

micro-analysis of (VAN ITALLIE and VAN TOORENBURG), A., ii, 140.

Optical activity and position isomerism (Cohen and de Pennington), T., 57; A., ii, 93.

and refraction of liquid crystals (STUMPF), A., ii, 209.

(SICMFF), A., II, 2008.
inversion, Walden's (SENTER and TUCKER), T., 140; A., i, 166; (SENTER, DREW, and MARTIN), T., 151; A., i, 166; (CLOUGH), T., 526; A., ii, 255.
properties of disperse systems (LIFSCHITZ) A ii 181.

schitz), A., ii, 181; (Lifschitz and Brandt), A., ii, 253.

rotatory power of isotropic and anisotropic liquids (Born), A., ii, 283.

Optically-active compounds, rotatory power and chemical constitution of (Clough), T., 526; A., ii, 255.

Organic compounds, nomenclature of (PATTERSON and CURRAN), A., i, 97. relation of the configuration of, to their physical and chemical properties (MICHAEL), A., i, 249.

photosynthesis of, from inorganic compounds (MOORE and WEBSTER),

A., ii, 211.

association of, in benzene and alcohol solution (Innes), T., 410; A., ii, 219.

nic compounds, combustion (LEVENE and BIEBER), A., Organic of

oxidation of, by chromic acid (WIN-DAUS), A., ii, 22.

additive compounds of potassium hydroxide with (DEHN and MER-LING), A., i, 67.

action of sulphur on (SZPERL; SZPERL and Wierusz-Kowalski), A., i,

aromatic, condensations with (MEYER

and HOFMANN), A., i, 66. catalytic reduction of, with platinum (WILLSTÄTTER and JAQUET), A., i, 391.

action of aromatic alcohols with, in presence of aluminium chloride (Huston and Friedemann), A., i, 299.

crystalline, relation between the optical and geometrical constants of (WHERRY), A., ii, 259.

halogenated, catalytic reduction of (Rosenmund and Zetzsche), A., i,

antiseptic properties of (KLIGLER), A., i, 469.

destruction of, in urine (CORDIER),

A., ii, 204. microchemical analysis of (Dubsky),

A., ii, 130. estimation of iodine in (TARUGI), A.,

ii, 203. Organic haloids, hydrolysis of, by water in presence of metals (Doughty), A.,

Organic matter, method for destruction of (Duret), A., ii, 335.

Organism, animal, decomposition of aliphatic acids in (LENK), A., i, 281.

fixation of alkaloids in the (VAN LEEUWEN), A., i, 463.

presence of a co-ferment of zymase in (Meyerhof), A., i, 464.

Organs, fixation of metals by extracts of (Rebello-Alves and BENEDI-CENTI), A., i, 323.

constituents of alcoholic extracts of, which are active as antigens (SIL-BERSTEIN), A., i, 464.

animal, estimation and distribution of bromine in (AUTENRIETH), A., ii,

tetroxide, reduction of, by Osmium hydrogen chloride (MILBAUER), A., ii, 202.

compounds of, with alkali hydroxides (Tschugaev), A., ii, 322.

Osmium, detection of (TSCHUGAEV), A., ii, 335.

Osmosis of colloidal solutions (Ost-WALD), A., ii, 391. electrical. See Electrical osmosis.

Osmotic pressure, measurement of, in plant cells (Höfler), A., i, 283. kinetic theory of (Porter), A., ii, 64;

(JÄGER), A., ii, 187. in relation to the constitution of water (Bousfield), A., ii, 64.

of gelatin solutions (LOEB), A., i, 510.

of salt solutions (GHOSH), T., 707; A., ii, 392.

with chemically inert membranes (BIGELOW and ROBINSON), A., ii, 156, 187.

Osmotic systems, mechanism of (TINK-ER), A., ii, 63.

Ovalbumin. See under Albumin.

isoOxadiazoles, and their oxides, nitroderivatives of (GREEN and Rowe), T., 67; A., i, 127.

Oxalic acid, deposition of crystals of, from ethyl a-chloroacetoacetate (v. KONEK-NORWALL), A., i, 289.

magnesium salt, precipitation (Astruc and Camo), A., ii, 275.

complex rhodium salts of (JAEGER), A., i, 3.

compound of selenium dioxide and (GASSMANN), A., i, 2.

Wirth, of (Adams, esters FRENCH), A., i, 165.

ethyl ester, action of, on ethyl B-aminocrotonate, in presence of potassium ethoxide (WISLICENUS and Schöllkopf), A., i, 157.

methyl ester, hydrolysis of, in presence of iodide and iodate (SKRABAL), A., ii, 12.

estimation of, by the electrical conductivity method (HARNED and LAIRD), A., ii, 412.

separation of, from tartaric acid (BAU), A., ii, 412.

Oxalotungstites. See under Tungsten. Oxalyl chloride, reactions of, with aromatic acids and with alcohols (ADAMS, WIRTH, and FRENCH), A., i, 165.

N-Oxalylcarbazole (Copisarow), 819.

Oxamide, formation of urea and of biuret from (WERNER and CARPENTER), T., 694; A., i, 528.

Oxidation in organic liquids (ABELOUS and ALOY), A., i, 150.

Oximes, catalytic dehydration (MAILHE and DE GODON), A., i, 105.

a-Oximino-acids, dissociation constants of (HICKS), T., 554; A., i, 338. Oxindoles, hydroxy- (WAHL), A., i, 236.

Oxosilane, and its polymeride (STOCK, Somieski, and Wintgen), A., ii, 111. Oxyberberine, preparation of (Perkin), T., 737.

n- and iso-Oxyepiberberines, and their derivatives (PERKIN), T., 518; A., i,

Oxydones (Lopez-Pérez), A., i, 88, **4**17.

Oxygen, preparation of, free from chlorine (Chemische Fabrik Grünau, LANDSHOFF & MEYER, FRANKE, and SCHMIEDT), A., ii, 164.

constitution and rotatory power of (Sommerfeld), A., ii, 89.

scattering of light in (Born), A., ii,

coefficient of magnetisation of (BAUER, Weiss, and Piccard), A., i, 387.

occlusion of, by metallic electrodes (HARDING and SMITH), A., ii, 424. solubility of, in water (Coste), A., ii,

influence of tension of, on metabolism (GAARDER), A., i, 512.

transmission of, by copper salts (Justin-Mueller), A., ii, 360.

respiration of, during narcosis (v. Is-SEKUTZ), A., i, 462.

Oxygen estimation :-

estimation of, in blood (HENDERSON and SMITH), A., ii, 81; (VAN SLYKE), A., ii, 82.

estimation of, in metabolism experi-ments, by Winkler's method (Os-TERHOUT and HAAS), A., ii, 24.

Oxygen electrode. See Electrode. Oxyhemoglobin, ultra-violet absorption spectra of (MASHIMO), A., ii, 91.

2-0xynaphthindole-3-carboxylic acid, 3hydroxy-, esters of (MARTINET), A., i, 306.

ε-Oxysantonin, and its phenylhydrazone (Cusmano), A., i, 434.

Ozone, formation of, in the corona discharge (Anderegg), A., ii, 42. reaction of hydrogen peroxide with (ROTHMUND and BURGSTALLER),

A., ii, 16.

P.

Palladium, catalytic action of, in presence of mercury and mercuric oxide (PAAL and HARTMANN), A., ii, 303.

hydrosols, influence of metallic hydroxides on the catalytic activity of (PAAL and HARTMANN), A., ii, 357.

Palmitic acid, nephelometric value of (Csonka), A., ii, 277.

Palmitic acid, cerous salt (MORRELL), T., 116; A., i, 98.

N-Palmitylcarbazole (Copisarow), T.,

Pancreas, composition and activity of different parts of (Nelson and Long). A., i, 140.

Panicum crus Galli, constituents of a salt from the ashes of (LACROIX), A., i, 366.

Panus stypticus, constituents of (Zell-NER), A., i, 55.

Paracetaldehyde, preparation of (So-CIÉTÉ CHIMIQUE DES USINES DU RHÔNE), A., i, 289.

Paraffins. See Hydrocarbons.

Paraffin ethers, preparation of (Roessler & HASSLACHER CHEMICAL Co.), A.,

Paraffin wax, oxidation of (BERGMANN), A., i, 285; (AKTIEN-GESELLSCHAFT FÜR MINERALÖL INDUSTRIE VORM. Fanto & Co.), A., i, 333.

Paramagnetism and the quantum theory (Reiche), A., ii, 185.

Pathology, chemical studies in (HERZ-FELD and KLINGER), A., i, 47, 241, 357.

Patina, artificial, deposition of, on copper (GROTIAN), A., ii, 233.

Peas, preparation of legumin from (HAM-MARSTEN), A., i, 509.

influence of metallic salts on the germination of (MAQUENNE and DEmoussy), A., i, 149.

Pectin, and its derivatives, constitution of (v. Fellenberg), A., i, 215.

Pectolite from New Jersey (GLENN), A.,

Pellagra, constituents of diets which produce (McCollum and Simmonds), A., i, 53.

Pelletierine, constitution of, and its isomerides and derivatives (HESS and Eichel), A., i, 33, 404.

See 4-Penta-acetyl-p-digallic acid. (3':4':5'-Triacetoxybenzoyloxy)-3:5-diacetoxybenzoic acid.

Pentamethylenediamine (cadaverine) phosphotungstate (Drummond), A., i,

Pentamminecobalt salts. See under Cobalt.

Pentane, mobility of ions in vapour of (YEN), A., ii, 213.

Pentane, αδε-tribromo- (v. Braun and Köhler), A., i, 164.

isoPentane, isochore for (WEISS), A., ii, 291.

cycloPentanones, preparation of, from hexacyclic ketones (WALLACH, GER-HARDT, and JESSEN), A., i, 442.

△8-Pentenyl bromide (v. Braun and Köhler), A., i, 164.

Pentose, estimation of, in urine (TES-

TONI), A., ii, 85.

Peppermint oil, Japanese, constituents

of (Walbaum), A., i, 302.

Pepsin, action of (RINGER; HAMMAR-

STEN), A., i, 459. action of, on legumin (HAMMARSTEN), A., i, 510.

rennetic properties of (GRABER), A., i,

estimation of, in gastric juice (MI-CHAELIS), A., ii, 468.

Peptones, composition and hydrolysis of (Davis), A., i, 131.

Perarsenates. See under Arsenic.

Perfumes, odour and solubility of (BACK-MAN), A., i, 88.

Perhydroindole, and its salts (WILL-STÄTTER and JAQUET), A., i, 392.

Periodic system of the elements (Wells), A., ii, 190; (STEINMETZ), A., ii, 225; (MEYER), А., ii, 263; (SCHMIDT), А., ii, 305; (НАСКИ), A., ii, 306, 396.

and their electrical conductivity (GRÜNEISEN), A., ii, 287.

in relation to the electrolytic potential (THOMLINSON), A., ii,

and Prout's hypothesis (LACOMBLÉ; Scheringa), A., ii, 105.

Permeability (STILES and JÖRGENSEN), A., i, 94.

study of (Brooks), A., i, 471; (Oster-

ност), А., і, 471, 472. of protoplasm (TROENDLE), A., i, 244.

Permutite, basic exchange in (ROTH-MUND and Kornfeld), A., ii, 315.

Peroxides, estimation of, by Bunsen's method (Rupp), A., ii, 369.

Peroxydases (WILLSTÄTTER and STOLL), A., i, 53**5**.

action of potassium permanganate on (BUNZEL and HASSELLRING), A., i, 86.

Perphosphates. See under Phosphorus. Petroleum, refining of distillates of (Brooks and HUMPHREY), A., i, 286.

3:4-Phenacylidenecoumarin, 3-cyano-

(Widman), A., i, 348.

3:4-Phenacylidenecoumarin-3-carboxylic acid and m-nitro-, ethyl esters (WIDMAN), A., i, 348, 394.

a8-Phenacylidenesalicylidenemalonic See 2-Benzoyl-3-o-hydroxyphenylcyclopropane-1:1-dicarboxylic acid.

3:4-Phenanthraquinone (BARGER), T., 220; A., i, 261.

Phenanthrene, solubility of, in various solvents (HILDEBRAND, ELLEFSON, and BEEBE), A., i, 62.

association of, in benzene and alcohol

(INNES), T., 431.
Phenanthrene, 3:4-dihydroxy- (morphol), synthesis of (BARGER), T., 218; A., i, 261.

Phenanthrene-3- or -6-sulphonic acid, 10-bromo-, liquid crystals of hydrates of (LEHMANN), A., ii, 260.

Phenazothionium, and 5-amino-, salts of, and their absorption spectra (KEHR-MANN and SANDOZ), A., i, 126.

Phenazoxonium, and amino-, and their salts (Kehrmann and Boubis), A., i,

Phenazoxonium, 3:9-diamino-, hydro-chloride, and its absorption spectra (KEHRMANN and SANDOZ), A., i, 126.

Phencyazonium compounds (Kehrmann and Sandoz), A., i, 313.

p-Phenetidine, derivatives of (REUTTER), A., i, 496.

p-Phenetidine, 2:6-dibromo-4-amino-, 4acetyl derivative (Fuchs), A., i, 64.

a-p-Phenetidinoglyoxylic acid, ethyl ester dichlorophenylhydrazone (Bü-Low and Huss), A., i, 43.

o-Phenetidinomethyleneacetoacetic acid, ethyl ester (DAINS and HARGER), A., i, 239.

Phenetole, 4-chloro-2:6-dibromo- (HUN-TER and JOYCE), A., i, 63.

1-Phenetylphenthiazine, 3:9-dinitro-(KEHRMANN, LIEVERMANN,

FRUMKINE), A., i, 308.

Phenol, formation of, by bacteria in the intestine (RHEIN), A., i, 206.

freezing points of mixtures of cresols and (DAWSON and MOUNTFORD), T., 923.

freezing-point and boiling-point curves of mixtures of cresols and (Fox and BARKER), A., i, 427.

equilibrium of, with benzamide, and with acetamide and ethyl alcohol (KREMANN and WENZING), A., i,

and its nitro-derivatives, equilibrium of phenylenediamines with (KRE-MANN and PETRITSCHEK), A., ii, 69. compounds of pyridine with (Skirkow

and BINMORE), A., i, 547. estimation of, in presence of cresols (Dawson and Mountford), T., 935; (KNIGHT, LINCOLN, FO. MANEK, and FOLLETT), A., ii, 84.

estimation of, in commercial cresylic acid (Fox and Barker), A., ii, 374. p-amino-, electrolytic preparation of (Sнојі), А., і, 342.

CXIV. ii.

Phenol, 3-chloro-4:6-dinitro- (Borsche, Löwenstein, and Quast), A., i, 13. 3:5-dichloro-4-nitroso- (Willstätter and Schudel), A., i, 400.

o-nitroso-, preparation of, as a lecture experiment (BAUDISCH), A., i, 496.

Phenols, effect of water on the action of aluminium with (Seligman and Williams), A., i, 333.

catalytic decomposition of silver salts of (HUNTER and JOYCE), A., i, 63.

and their derivatives in blood (THEIS and BENEDICT), A., i, 558.

detection of, in urine (RHEIN), A., i, 363. estimation of, colorimetrically in blood (BENEDICT and THEIS), A., ii, 461.

Phenols, amino-, substitution in (Fuchs), A., i, 64.

diamino-, oxidation of (PICCARD and LARSEN), A., i, 396.

chlorobromo- and chloroiodo-, and their silver salts (HUNTER and JOYCE), A., i, 63.

nitro-, salts of, solubility of, in aqueous-alcoholic solutions (Fisch-

ER), A., i, 219.

Phenolearboxylic acids, acylated, migration of acyl in the hydrolysis of (FISCHER, BERGMANN, and LIPSCHITZ), A., i, 172.

Phenoletraiodophthalein, and tetrabromo-, tetraiodo-, and tetranitro-, and their derivatives (PRATT and SHUPP), A., i, 177.

Phenolphthalein, tetrachlorotetraiodoand tetraiodo, and their derivatives (Orndorff and Mahood), A., i, 344.

Phenol-o-sulphonanilide (Anschütz and Zymandl), A., i, 424.

Phenol-p-sulphonanilide (ANSCHÜTZ and MOLINEUS), A., i, 424.

Phenoisulphonephthalein, and tetrabromo- and -nitro-, and their salts, absorption spectra of (WHITE and ACREE), A., ii, 328.

Phenolsulphonic acid, basic barium and calcium salts of (Belloni and Bacci),

A., i, 64.

Phenoisulphonic acids, action of phosphorus chlorides on (Anschütz and Molineus), A., i, 423.

Phenol-p-sulphonpiperidide (Anschütz and Molineus), A., i, 424.

Phenol-o-sulphon-p-toluidide (AN-SCHÜTZ and ZYMANDL), A., i, 424.

Phenol-p-sulphon-p-toluidide (ANSCHÜTZ and MOLINEUS), A., i, 424.

Phenol-o-sulphonyl chloride, dichloroorthophosynate of (o-chlorosulphonylphenyl dichloro-orthophosphate) (An-SCHÜTZ and ZYMANDL), A., i, 424. Phenol-p-sulphonyl chloride, metaphosphate of (p-chlorosulphonylphenyl metaphosphate) (Anschütz and Moli-NEUS), A., i, 424.

Phenonaphthacridonequinone, and its salts and dinitro- (LESNIANSKI), A., i, 405

Phenoxide, sodium, decomposition of, by carbon dioxide (Denbigh), A., i, 535.

Phenoxyacetic acid, amino-, and nitro-, and their amides and derivatives (JACOBS and HEIDELBERGER), A., i, 68, 70.

Phenoxyacetyl chloride, o-nitro- (JACOBS and Heidelberger), A., i, 70.

Phenoxyacetylcarbamide, amino-, and nitro-, and their derivatives (JACOBS and HEIDELBERGER), A., i, 70.

N-Phenoxyacetylcarbazole (COPISA-ROW), T., 818.

3-Phenoxydiphenylamine, 4:6-dinitro-(Borsche, Löwenstein, and Quast), A., i, 13.

Phenoxyethyl bromide, p-amino- (JACOBS and HEIDELBERGER), A., i, 71.

Phenoxy-Δα-pentene, and its dibromide (v. Braun and Köhler), A., i, 164.

3-Phenoxyphenol, 4:6-dinitro (Borsche, Löwenstein, and Quast), A., i, 13.

Phenthiazinesulphoxide, 3:9-dinitro-, condensation products of (Kehrman, Lievermann, and Frumkine), A., i, 308.

Phenyl allyl ether, p-amino-, acetyl derivative (Society of Chemical Industry in Basle), A., i, 297.

lactyl and isovaleryl derivatives of (Society of Chemical Industry in Basle), A., i, 496.

oxide, 4-chloro-2-nitrothio- (ZINCKE and BAEUMER), A., i, 537.

dichloro-orthophosphate, o-chloro-(Anschütz and Zymandl), A., i, 424.

o-chlorosulphonyl derivative. See Phenol-o-sulphonyl chloride, dichloro-orthophosphate of.

metaphosphate, p-chlorosulphonyl derivative. See Phenol-p-sulphonyl chloride, metaphosphate of.

sulphur chloride. See Benzene, chlorothiol-.

sulphite and p-chloro- (BADISCHE ANILIN-&SODA-FABRIK), A., i, 297. thiocyanate, 4-chloro-2-nitro- (ZINCKE and BAEUMER), A., i, 537.

Phenylacetic acid, association of, in benzene (INNES), T., 432.

phenylacetamidine salt. See Phenylacetiminohydrin.

Phenylacetic acid, mamino-, methyl ester and amide and the N-chloroacetyl derivative of the latter (JACOBS and HEIDELBERGER), A., i, 68.

Phenylacetiminohydrin (RULE), T., 11. Phenylacetylcarbamide, pamino, and its chloroacetyl derivative, p-nitro-, and α-chloro- (JACOBS and HEIDEL-

BERGER), A., i, 70.

Phenylacetylene, 2:6-dichloro- (REICH, SALZMANN, and KAWA), A., i, 15.

Phenylacrylic acid, a\beta-dibromo-2:6-di-(Reich, SALZMANN, KAWA), A., i, 15.

4-bromo-2-Phenylallylthiccarbamide, iodo- (DAINS, VAUGHAN, and JAN-

NEY), A., i, 340.

Phenylaminoacetic acid, influence of solvent on the sign of the product in conversion of phenylbromoacetic acid into (SENTER and TUCKER), T., 140; A., i, 166.

3-Phenyl-1:4-benzothiazine, 6-chloro-(ZINCKE and BAEUMER), A., i, 538.

p-Phenylbenzoylphenylethylene (JÖRLANDER), A., i, 21.

a-Phenyl-γ benzylideneacrylonitrile, ap-amino- (KAUFFMANN and JEUTTER), A., i, 114.

γ-Phenyl-a-benzylidenecrotonolactone, γ -p-bromo- (Kohler, Hill, and BIGELOW), A., i, 73.

a-m-nitro- (Kohler, Hill, and Bige-Low), A., i, 74.

3-Phenyl-2-benzylquinoxaline, amino-, acetyl derivative (Jörland-ER), A., i, 22.

Phenylbromoacetic acid, influence of solvent on the sign of the product in conversion of, into phenylaminoacetic acid (SENTER and TUCKER), T., 140; A., i, 166.

β-Phenyl-β'-p-bromobenzoyldimethylmalonic acid, \$\beta\$-bromo- (Kohler, Hill, and Bigelow), A., i, 73.

Phenylcarbamic acid, heptyl ester (LE-VENE and TAYLOR), A., i, 422. esters of terpene alcohols and phenols

with (WEEHUIZEN), A., i, 341.

4-bromo-2-iodo-Phenylcarbamide, (DAINS, VAUGHAN, and JANNEY), A., i, 340.

d-a-Phenylcarbamidopropionic acid (West), A., i, 311.

Phenyl p-chloro- α -hydroxystyryl ketone (Bodforss), A., i, 232

Phenyl 1-chloro-\$-naphthyl sulphide, op-dihydroxy-, and its diacetyl derivative (ZINCKE and EISMAYER), A., i, 387.

Phenyl 4-chloro-2-nitrophenylthiolmethyl ketone (ZINCKE and BAEU-MER), A., i, 538.

2-Phenylcinchonic acid (atophan), pharmacology of, and its derivatives (ROTTER), A., i, 363.

uranyl salt (MÜLLER), A., i, 383.

p-aminoa-Phenylcinnamonitrile, (KAUFFMANN and LUTZ), A., i, 114.

a-p-amino- (Kauffmann and Jeut-TER), A., i, 114.

B-Phenylcoumarins (SONN), A., i, 401.

γ-Phenylcrotonic acids, hydroxy-, replacement of B-hydrogen by phenyl in (BOUGAULT), A., i, 116.

Phenyldiacetylene, dinitro-, and its tetrabromo-derivative (REICH, AGAMIRIAN, KOEHLER, GAJKOWSKI, and LUBECK),

A., i, 262.

Phenyl-4:5-dimethoxy-2:3-methylenedioxyphenylmethyl alcohol (FABINYI and Széki), A., i. 18.

Phenyldimethylethyl alcohol, synthesis of (HALLER and BAUER), A., i, 428.

1-Phenyl-3:4-dimethyl-1:2-pyrazo-6:7pyrone, 1-op-dichloro- (Bülow and Huss), A., i, 315.

Phenyldithienylcarbinol (Thomas and Couderc), A., i, 504.

Phenyldi-p-tolylcarbinol, p-hydroxy-(GOMBERG and TODD), A., i, 74.

Phenylenebisdibenzoylethylene (Bodforss), A., i, 230.

m- and p-Phenylenediamines stanni- and stanno-chlorides (DRUCE), T., 716; A.,

Phenylenediamines, equilibrium of phenol and nitrophenols with (KREMANN and Petritschek), A., ii, 69.

p-Phenylenedi-n-butyldiamine dihydrochloride (Reilly and Hickinbottom), T., 108.

p-Phenylenemethyldiamines, acylated (Morgan and Grist), T., 688; A., i, 450.

Phenylethane. See Ethylbenzene.

Phenyl α -ethoxyethyl ketone p-nitrophenylhydrazone (v. Auwers), A., i, 18.

Phenylethyl ethyl ether (RANEDO), A., i, 388.

Phenylethylamine, reduction of (WEIN-HAGEN), A., i, 107.

and p-hydroxy-, phosphotungstates (DRUMMOND), A., i, 336.

Phenylethylbarbituric acid, preparation of (RISING and STIEGLITZ), A., i, 271.

3-a-Phenylethylindene (THIELE Merck), A., i, 485.

Phenylethyl methyl ketone, m- and phydroxy- (Nomura and Nozawa) A., i, 439.

Phenylglyoxylic acid, reduction of the azine and hydrazone of (DARAPSKY and PRABHAKAR), A., i, 506.

nitration of (REICH and MOREL), A., i, 15.

- Phenyl-group, intramolecular migrations of (Montagne), A., i, 534.
- Phenylguanidine, and nitro-, and their derivatives (ARNDT and ROSENAU), A., i, 40.
- 5-Phenylhydantoin, 1-amino- (BAILEY and PRITCHETT), A., i, 459.
- Phenylhydrazine, colour reaction of mercury fulminate with (LANG-HANS), A., ii, 414.
 - colour reactions of, with wood fibres (JENTSCH), A., ii, 248.
- Phenylhydrazines, substituted, rate of reduction of (Franzen), A., i, 456.
- Phenylhydrazinothymic acid, barium salt (Feulgen and Landmann), A., i, 554.
- Phenylhydrazones (v. Auwers), A., i, 193.
- Phenylhydroxylamine, nitroso-, ammonium salt, use of, in analysis (Brown), A., ii, 84.
- Phenyl 4-hydroxy-3 methoxyphenylethyl ketone (Nomura and Nozawa), A., i, 439.
- Phenyl 4-hydroxy-3-methoxystyryl ketone (Nomura and Nozawa), A., i, 439.
- Phenyl-2'-α-hydroxynaphthyl sulphide, 4-chloro-2-nitro- (ZINCKE and BAEU-MER), A., i, 538.
- d-Phenylhydroxyphenyltartramide (Casale), A., i, 536.
- Phenyl a-hydroxystyryl ketone, pamino-, acetyl derivative (Jörlander), A., i, 21.
- Phenyliminodiacetic acid, metallic salts (Dubsky and Spritzmann), A., i, 102, 103.
- 1-Phenylindene (v. BRAUN), A., i, 111.
- Phenyllactic acid, p-hydroxy-, formation of, in the animal organism (Ko-TAKE and MATSUOKA), A., i, 467.
- Phenylmenthylacetonitriles, isomeric (Boedtker), A., i, 223.
- Phenylmenthylcyanomethane. See Phenylmenthylacetonitrile.
- a-Phenyl-2- and -4-methoxycinnamonitriles, a-p-amino- (KAUFFMANN and LUTZ), A., i, 114.
- Phenyl p-methoxycinnamylidenemethyl ketone, p-chloro- (STRAUS and BLAN-KENHORN), A., i, 501.
- Phenyl p-methoxystyryl ketone, pchloro- (STRAUS and BLANKENHORN), A., i, 501.

- Phenyl p-methoxystyryl ketone-sulphonic acid, and its ammonium salt (Pfeiffer and Negreanu), A., i, 19.
- ω-Phenylmethylaminodionine, and its hydrochloride (v. Braun, Heider, and Müller), A., i, 108.
- β-Phenylmethylaminoethyltrimethylammonium bromide (v. Braun, Heider, and Müller), A., i, 108.
- ω-Phenylmethylaminophenacetin (v. BRAUN, HEIDER, and MÜLLER), A., i. 108.
- β-Phenylmethylaminopropionamide (v. Braun, Heider, and Müller), A., i. 108.
- β-Phenylmethylaminopropionitrile (v. Braun, Heider, and Müller), A., i, 108.
- Phenyl methyl diketone, di-p-nitrophenylhydrazone (v. Auwers), A., i, 18.
- a-Phenyl-3:4-methylenedioxycinnamonitrile, a-p-amino- (KAUFFMANN and LUTZ), A., i, 114.
- d-α-Phenylmethylhydantoin (West), A., i, 311.
- 1-Phenyl-4-methylhydantoin, 2-thio-(JOHNSON and TICKNOR), A., i, 256.
- 3-Phenyl-5-methyl-1:2:4-oxadiazole (DIELS), A., i, 449.
- 3-Phenyl-2-methylquinoxaline (v. Auwers), A., i, 19.
- Phenyl-α-methylthiohydantoic acid, ethyl ester (Johnson and Ticknon), A., i, 256.
- 1-Phenylnaphthalene-2:3-dicarbimide (SCHAARSCHMIDT and KORTEN), A., i, 434.
- Phenyl m-nitro-α-hydroxystyryl ketone, preparation of, and its semicarbazone (Bodforss), A., i, 231, 232.
- 3-Phenyl-5-m-nitrophenyl-4:5-dihydropyrazole, and -1-carboxylamide, 4hydroxy- (Bodforss), A., i, 231.
- 3-Phenyl-5-m-nitrophenylisooxazole (Bodforss), A., i, 230.
- 3-Phenyl-5-m-nitrophenylisooxazolidine, 5-hydroxy-, and nitroso- (Bodforss), A., i, 231.
- α-Phenyl-Δα-pentene (v. Braun and Köhler), A., i, 163.
- 1-N-Phenyl-C-phenyl-1:2-anthraquinoneiminazole, 3-bromo- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜN-ING), A., i, 191.
- Phenyl-δ-phenylbutadiene, α-cyanoα-amino-. See α-Phenyl-γ-benzylideneacrylonitrile, α-p-amino-.
- Phenyl-1'-piperidine, 4:6-dinitro-3hydroxy- (Borsche, Löwenstein, and Quast), A., i, 14.

Phenylpropiolic acid, hydrogenation of, with colloidal platinum (PAAL and Schwarz), A., i, 343. salt (McMaster and

ammonium WRIGHT), A., i, 263.

Phenylpropiolic acid, m-amino- (REICH, AGAMIRIAN, KOEHLER, GAJKOWSKI, and Lubeck), A., i, 262.

2:6-dichloro- (REICH, SALZMANN, and

KAWA), A., i, 15.

Phenylpropionamide, a-amino-\beta-p-hydroxy-, a-benzoyl derivative (CURTIUS and Donselt), A., i, 46.

Phenylpropionamidine, preparation of, and its salts (Scholl and Bertsch), A., i, 495.

8-Phenylpropion-anilide, -azide, and -hydrazide, B-hydroxy- (DARAPSKY

and Berger), A., i, 508.

B-Phenylpropionic acid, α-amino-, influence of the solvent on the sign of the product in conversion of abromo-β-phenylpropionic acid into (SENTER, DREW, and MARTIN), T., 151; A., i, 166.

a-bromo-, influence of the solvent on the sign of the product in conversion of, into α-amino-β-phenylpropionic acid (SENTER, DREW, and MARTIN), T., 151; A., i, 166.

ethyl ester (Darapsky and Ber-GER), A., i, 508.

αβ-dibromo-β-2:6-dichloro-(Reich, SALZMANN, and KAWA), 15.

tribromonitro-, and their methyl esters (Reich, Agamirian, Koehler, GAJKOWSKI, and LUBECK), A., i, 262.

 $p-\beta$ -Phenylpropionoxycinnamic acid, 4'-amino-, and 4'-nitro-, methyl esters (v. Konek and Pacsu), A., i, 394.

β-Phenylpropionyl chloride, β-p-nitro-(v. Konek and Pacsu), A., i, 394.

Phenylpropylcarbamic acid, a-amino- β -p-hydroxy-, α -benzoyl derivative, ethyl ester (CURTIUS and DONSELT), A., i, 46.

Phenylquinoline-4:3'-dicarboxylic acid, 6-bromo-4'-hydroxy-(FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 548.

Phenylsilane, bromo- and chloro-derivatives of (GRÜTTNER and KRAUSE), A., i, 133.

Phenylsilicic acid, p-bromo-, and pchloro- (GRÜTTNER and KRAUSE), A., i, 133.

Phenylstibinic acids, 2-mono- and 2:4di-nitro- (CHEMISCHE FABRIK VON F. HEYDEN), A., i, 275.

Phenylstyrene, a8-dibromo-2:6-dichloro-(REICH, SALZMANN, and KAWA), A., i, 15.

Phenyl styryl ketone (benzylideneacetophenone), p-chloro-, dibromides (Bod-FORSS), A., i, 232.

Phenyl styryl ketones, sulphonation of (PFEIFFER and NEGREANU), A., i,

Phenylsuccinic acids, optical activity of, and their esters (WREN), T., 210; A., i, 264.

Phenylsuccinic acid series (WREN), T., 210; A., i, 264; (WREN and WIL-LIAMS), T., 832; (WREN and STILL), A., i, 17.

Phenyl sulphoanisylethyl ketone, and its ammonium salt (Pfeiffer and NEGREANU), A., i, 19.

Phenyltartramic acid, p-hydroxy-, and its derivatives (CASALE), A., i, 535.

Phenyl-ac- and -ar-tetrahydro-a-naphthylamine, 2:4-dinitro- (Green and Rowe), T., 972.

Phenylthiocarbamide, o-nitro- (ARNDT and Rosenau), A., i, 41.

Phenylthiocarbimide, o-nitro- (ARNDT and Rosenau), A., i, 41.

Phenylthiolacetoacetic acid, 4-chloro-2-nitro-, ethyl ester (ZINCKE and BAEUMER), A., i, 538.

Phenylthiolacetone, 4-chloro-2-nitro-(ZINCKE and BAEUMER), A., i, 538.

Phenylthiolamine, 4-chloro-2-nitro-, and its benzylidene derivative (ZINCKE and BAEUMER), A., i, 538.

B-Phenylthionpropionanilide, polymeride of (WORRALL), A., i, 162.

Phenyl p-tolyl ketoxime, methyl ethers of (SEMPER and LICHTENSTADT), A., i, 437.

Phenyltriethylsilane, p-bromo-, chloro-, and p-iodo- (GRÜTTNER and Krause), A., i, 133.

β-Phenyltrimethylene glycol, and its acetate (PRINS), A., i, 261.

Phenyltrimethylethylenediamine, its dipicrate (v. Braun, Heider, and Müller), A., i, 108.

Phenyltri-n-propylsilane, p-chloro-(GRÜTTNER and KRAUSE), A., i, 133.

B-Phenylumbelliferone methyl ether. See 7-Methoxy-4-phenyl-1:2-benzopyrone.

Phloroglucinol, o-cyanoacetyl derivative (Sonn), A., i, 31.

Phloroglucinolcarboxylic acid, formation and decomposition of (BAUR), A., ii, 158.

Phloroquinyl, oxidation of (BRATZ and v. Niementowski), A., i, 312.

isoPhorone (DELACRE), A., i, 422. pinacone from (HESS and MUNDERLOH), A., i, 291.

isoPhoroneacetylene (HESS and Mun-DERLOH), A., i, 291.

Phosphatides, estimation of (CIACCIO), A., ii, 463.

12-Phosphomolybdic acid (Rosenheim and JAENICKE), A., ii, 78.

Phosphorus, critical temperature and pressure of (VAN LAAR), A., ii, 8. black (SMITS, MEYER, and BECK), A.,

method of handling (BLOUNT), A., ii,

action of sulphuryl and thionyl chlorides on (NORTH and THOMSON), A., ii, 229.

occurrence of, in human urine (FEIGL), A., i, 514.

Phosphorus chlorides, action of, with phenolsulphonic acids (Anschütz and Molineus), A., i, 423.

trichloride, action of, on aliphatic alcohols (MILOBENDZKI and SACH-Nowski), A., i, 477.

action of, on unsaturated ketones (CONANT), A., i, 74.

haloids, action of chromyl chloride on (FRY and DONNELLY), A., ii, 167.

Phosphoric acid, permeability of cells towards (CROZIER), A., i, 279.

distribution of, in normal human blood (Bloor), A., i, 557.

esters, formation of, in alcoholic fermentation (LEBEDEV), A., i,

estimation of (SHUEY), A., ii, 20; (CLARENS), A., ii, 128; (GROSS-FELD; VORTMANN), A., ii, 129; (HEIDENHAIN), A., ii, (BALAREFF), A., ii, 352.

of, gravimetrically estimation (MUMMERY; BALAREFF), A., ii,

estimation of, as ammonium phosphomolybdate (VILLIERS), A., ii, 333**.**

recovery of molybdic acid after estimation of (Lynas), A., ii, 365.

estimation of, in presence of phosphorous and hypophosphoric acids (VAN NAME and HUFF), A., ii, 128.

estimation of, in blood (BLOOR), A., ii, 452.

estimation of, colorimetrically, in potable water (van Eck), A., ii, 370.

estimation of, in sea-water off Plymouth (MATTHEWS), A., ii, 197.

Phosphorus :---

Phosphates, anodic oxidation (FIGHTER and MÜLLER), A., ii,

in blood-serum (Feigl), A., i, 203,

estimation of, in blood-serum (MARRIOTT and HAESSLER), A.,

estimation of, volumetrically, in urine (Angiolani), A., ii, 240.

Hypophosphoric acid, hydrolysis and conductivity of solutions of (VAN NAME and HUFF), A., ii, 108.

estimation of, in presence of phosphorie and phosphorous acids (VAN NAME and HUFF), A., ii, 128.

Hypophosphates, preparation of (VAN NAME and HUFF), A., ii, 440.

Metaphosphoric acid, thermal dissociation of (BALAREFF), A., ii, 75. Perphosphates, preparation of (Ascu-

KENASI), A., ii, 166. Phosphorous acid, preparation (MILOBENDZKI and FRIEDMAN),

A., ii, 439.

alkyl esters of, and their metallic salts (MILOBENDZKI and SACH-NOWSKI), A., i, 477, 478; (MILO-BENDZKI and SZWEJKOWSKA), A., i, 479.

tautomerism and alkylation dialkyl esters of (MILOBENDZKI and Knoll), A., i, 522; (Milo-BENDZKI), A., i. 523.

aryl esters of (MILOBENDZKI and Szulgin), A., i, 495.

estimation of, in presence of hypophosphoric and phosphoric acids (VAN NAME and HUFF), A., ii, 128.

organic compounds Phosphorus (RIEDEL), A., i, 212.

Phosphorus estimation and separation :--

estimation of, in human blood-serum (FEIGL), A., i, 50.

estimation of, in iron and steel

(Czako), A., ii, 173. estimation of, in urine and fæces (Sato), A., ii, 406. separation of vanadium and (Kropf),

A., ii, 173.

Phosphoryl chloride, action of, on methyl and ethyl alcohols (BALAREFF), A., i, 97.

9-, 11-, and 12-Phosphotungstic acids (Rosenheim and Jaenicke), A., ii,

Phosphotungstates, organic, preparation of (Drummond), A., i, 336.

Photochemical reactions, law of (TRAUTZ), A., ii, 151.

ideal and real (WEIGERT), A., ii, 50. in aqueous solution (BENRATH), A., i,

reciprocal action of reducing agents on

(WOKER and MAGGI), A., i, 48.

Photochemistry, application of the quantum hypothesis to (WARBURG),

A., ii, 49. Photolysis and electrolysis (BAUR), A., ii, 284.

Photosynthesis (OSTERHOUT; OSTER-HOUT and HAAS), A., i, 470.

Phototropy and thermotropy (SENIER and GALLAGHER), T., 28; A., i, 109.

Phthal-p-acetylaminoanil, tetrabromo-(PRATT and Young), A., i, 540.

tetrachloro- and tetraiodo- (PRATT and PERKINS), A., i, 169.

Phthal-p-aminoazobenzene, tetrabromo-(PRATT and YOUNG), A., i, 541.

Phthalanil, tetrabromo- (PRATT and Young), A., i, 540.

3:4-dichloro- (PRATT and PERKINS), A., i, 169.

tetraiodo- (PRATT and PERKINS), A., i, 169.

Phthalanilic acid, tetrachloro-, aniline salt (Pratt and Perkins), A., i, 168. Phthal-p-bromoanil, tetrabromo- (Pratt

and Young), A., i, 540.

Phthaldibromoanils, tetrabromo-(PRATT

and Young), A., i, 540.

Phthal 2:4:6-tribromoanil, tetrabromo-(PRATT and YOUNG), A., i., 540.

Phthal-2:4:6-tribromophenylhydrazone, tetrabromo- (PRATT and Young), A., i, 541.

Phthal-o-carboxyanil, tetrabromo-(PRATT and Young), A., i, 541.

Phthal-3:4-dimethylanil, tetrabromo-(PRATT and YOUNG), A., i, 541.

(Pratt and Young), A., i, 541.

Phthalethoxyanils, tetrabromo (Pratt

and Young), A., i, 541.

Phthal-p-hydroxyanil (PRATT and Young), A., i, 540.

Phthal-p-hydroxyanil, tetrachloro-, and tetraiodo- (PRATT and PERKINS), A., i, 169

Phthalic acid, electrical conductivity of solutions of salts of (PATTEN, JOHNSON, and MAINS), A., ii, 387.

constitution and colour of derivatives of (Pratt and Perkins), A., i, 167, 169, 170; (Pratt and Miller), A., i, 171; (Pratt and Downey), A., i, 172; (Pratt and Coleman), A., i, 175, 176; (Pratt and Shupp), A., i, 177; (Pratt and Young), A., i, 540, 541.

Phthalic acid, dichlorodiiodo-, di- and tri-iodo-, 6-iodo-3-hydroxy, and their anhydrides and anils (PRATT and PERKINS), A., i, 170.

Phthalic anhydride, estimation of, in crude phthalic acid (Downs and

STUPP), A., ii, 376.

Phthalic anhydride, dichloro-, action of amines on (PRATT and PERKINS), A., i, 169.

tetrachloro-, phenylhydrazone (PRATT and MILLER), A., i, 171.

additive compounds of (PRATT and PERKINS), A., i, 167.

Phthalicsulphinide (ZINCKE and SCHÜR-MANN), A., i, 551.

Phthalimide, tetrabromo- (PRATT and YOUNG), A., i, 540.

tetraiodo- (PRATT and PERKINS), A., i, 169.

Phthal-p-iodoanil, tetrabromo- (PRATT and Young), A., i, 541.

Phthalnaphthylimides, tetrabromo-(PRATT and YOUNG), A., i, 541.

Phthalnitroanils, tetrabromoand Young), A., i, 540. tetrachloro-, and tetraiodoand Perkins), A., i, 168.

Phthaloxime, tetrachloro-, and its derivatives (PRATT and MILLER), A., i,

3:4:6-triodo-, and its salts and derivatives (PRATT and Young), A., i, 541.

tetraiodo-, and its derivatives (PRATT and Downey), A., i, 172.

Phthalphenylethylhydrazone, tetrabromo- (PRATT and YOUNG), A., i, 541.

Phthalphenylhydrazone, tetrabromo-(PRATT and YOUNG), A., i, 541.

Phthalsemicarbazone, tetrabromo-(Pratt and Young), A., i, 541.

Phthal-o- and -p-tolil, tetrabromo-(PRATT and YOUNG), A., i, 540.

tetrachloro-, and tetraiodo-, and their derivatives (PRATT and PERKINS), A., i, 168.

Phthal-2:4:5-trimethylanil, tetrabromo-(PRATT and YOUNG), A., i, 541.

3:4-Phthalyl-8:9-o-benzoylene-5-methylphenanthridine, and its derivatives (SCHOLL and DISCHENDORFER), A., i, 307.

Phthalylmalonic acid, constitution of esters of (v. Auwers and Auffenberg), A., i, 436.

Physiological action, relation between chemical constitution and (PYMAN), A., i, 90.

Physiological fluids, effect of fluorescein on the antagonism between potassium and uranium in (ZWAARDE-MAKER), A., ii, 182.

estimation of nitrogen in (DAVISSON), A., ii, 370.

estimation of proteins in (NAKASEKO), A., ii, 416.

estimation of uric acid in (Kowarsky), A., ii, 87.

Physiology, chemical studies in (HERZ-FELD and KLINGER), A., i, 47, 241, 357; ii, 355.

Physostigmine. See Eserine.

Phytin, estimation of, in plants and their products (RATHER), A., ii, 88.

Phytosterols in cabbage, and in fæces after feeding on cabbage (ELLIS), A., i, 361.

Picramic acid, preparation of (EGERER), A., i, 496.

Picric acid, detection of, microchemically (Tunmann), A., ii, 139.

detection of, with ferrous tartrate (Rupeau), A., ii, 139. detection of, in urine (Rozier), A.,

ii, 179.

and its derivatives, detection of, in urine (Ganassini), A., ii, 374.

estimation of, colorimetrically (La-PORTE), A., ii, 178.

Picric acid, dichloro-, preparation of (Willstätter and Schudel), A., i, 399.

Picrotoxin, detection of, microchemically (Tunmann), A., ii, 139.

4-Picrylthiol-1-ethylbenzene (Pollak, v. Fiedler, and Roth), A., i, 499. Piezometer (Leduc), A., ii, 155.

Pigments, extraction from plants (Willstätter and SCHUDEL), A., i, 399.

azo-dyes used in the manufacture of (BADISCHE ANILIN- & SODA-FAB-RIK), A., i, 239.

nitrogenous, of molasses (FRIEDRICH; STANĚK), A., i, 157.

Pilocarpine, influence of, on respiratory metabolism (KELEMAN), A., i, 511.

Pinacone, action of sulphuric acid on (DELACRE), A., i, 423.

Pine-wood, lignin from (KLASON), A., i, 59.

colour reactions of constituents of (Wichelaus and Lange), A., i, 151.

Pinoresinol, anhydride of (BAMBERGER and v. KLIMBURG), A., i, 120.

Piperazine, preparation of (PRATT and Young), A., i, 548.

Piperidine, reactions of, with organic haloids in ether solution (POWELL and Denn), A., i, 123.

a-Piperidinoglyoxylic acid, ethyl ester and amide dichlorophenylhydrazone (Bülow and Huss), A., i, 43. 2-Piperidylacetone. See α-2-Piperidyl-

propan-\$-one.

a-Piperidylethylalkine. See 2-Propylpiperidine, 2-a-hydroxy-.

2 Piperidyl ethyl ketone. See a-2-Piperidylpropan-a-one.

 β -2-Piperidylpropaldehyde (Hess and Еіснег), А., і, 33.

 α -2-Piperidylpropan- β -ol, action formaldehyde on (HESS and EICHEL), A., i, 36.

α-2-Piperidylpropan-α- and and their derivatives (HESS and Еіснеь), А., і, 35.

Piperonalpiperylhydrazone (WEIN-HAGEN), T., 585; A., i, 395.

Piperonoin oxalate (ADAMS, and FRENCH), A., i, 165.

Piperonylidene-4-bromo-2-iodoaniline (DAINS, VAUGHAN, and JANNEY), A., i, 340.

Piperylhydrazones (WEINHAGEN), T., 585; A., i, 395.

Pipette, safety (Behrman), A., ii, 20. Placenta, human, arginine in (HARD-

ING and FORT), A., i, 417. Placenta tissue, estimation of urea and

ammonia in (HAMMETT), A., ii, 250.

Plancheite, identity of shattuckite and (ZAMBONINI), A., ii, 170. Plants, microchemistry of (Molisch),

A., i, 247. action of acids on (ONODERA), A., i,

149.

distribution of aluminium in (STOK-LASA, ŠEBOR, ZDOBNICKÝ, TÝMICH, Horák, Němec, and Cwach), A., i, 475.

composition of "assimilation-secretion" in (MEYER), A., i, 245.

assimilation of carbohydrates by (BOKORNY), A., i, 366.

soluble earbohydrates in the leaves of

(KYLIN), A., i, 245. assimilation of carbon dioxide by (WILLSTÄTTER and STOLL), A., i, 207; (WATERMAN), A., i, 518.

occurrence of carotin in (GILL), A., i,

flavone derivatives in (Shibata and NAGAI), A., i, 331.

toxic action of hydrocyanic acid on (Brenchley), A., i, 95.

formation of inulin in (Colin), A., i, 151.

manganese in drugs extracted from (WESTMAN and ROWAT), A., i, 246.

Plants, distribution of some rarer metals in (Robinson, Steinkoenig, and Miller), A., i, 331.

assimilation of nitrates and nitrites by

(BAUDISCH), A., i, 474. preparation of nucleic acids from (CLARKE and SCHRYVER), A., i, 130.

influence of organic compounds on the development of (CIAMICIAN and RAVENNA), A., i, 93, 473; (FUNCHESS), A., i, 150. extraction of pigments from (WILL-

extraction of pigments from (WILL-STÄTTER and SCHUDEL), A., i, 399. effect of potassium on the growth of (WEEVERS), A., i, 518.

action of potassium permanganate on peroxydases in (Bunzel and Hassellring), A., i, 86.

cultivated and wild, relative acidity of the sap of (CAMPBELL), A., i, 475.

green, toxic action of galactose and mannose towards (KNUDSEN), A., i, 95.

medicinal, of the Philippine Islands, constituents of (BRILL and WELLS), A., i, 283.

estimation of cæsium and rubidium in the ashes of (ROBINSON), A., ii, 132. estimation of carbon dioxide in the respiration of (GURJAR), A., ii, 82. and their products, estimation of

phytin in (RATHER), A., ii, 88.

Plant cells, measurement of osmotic pressure in (HÖFLER), A., i, 283.

Plant sterols (ELLIS), A., i, 420.

Plant tissues, relation between acids and bases in (André), A., i, 56. swelling of, in water (STILES and JÖRGENSEN), A., i, 94.

Platinum, K-spectra of (LILIENFELD and SEEMANN), A., ii, 383.

adsorption of gases by (LANGMUIR), A., ii, 430.

catalytic reduction of aromatic compounds with (WILLSTÄTTER and JAQUET), A., i, 391.

colloidal, precipitation of, on metallic surfaces (SPEAR and KAHN), A., ii, 66.

hydrogenation of phenylpropiolic acid with (PAAL and SCHWARZ), A., i, 343.

substitutes for, in electrolytic apparatus (NICOLARDOT and BOUDET), A., ii, 425.

Platinum compounds with hydroxylamine (Tschugaev and Tschern-Jaev), T., 884.

Platinichlorides, hydrated, dehydration of (Delépine and Boussi), A., ii, 322.

Poison, East Indian, for fish (Ishi-KAWA), A., i, 94.

Poisons, action of, on plants (Brench-LEY), A., i, 95.

Poisoning, lacquer (Toyama and Kayaba), A., i, 143.

Pollen, and its diseases (Koessler), A., i, 519.

isoPoly-acids(Rosenheim and Jänicke), A., ii, 19, 48, 77.

Polymorphism and isomerism (Pfeiffer and Klinkert), A., i, 344.

Polyneuritis in birds, and its prevention (DUTCHER and COLLATZ), A., i, 561; (SUGIURA), A., i, 562.

Pomegranate tree, alkaloids of (HESS and Eichel), A., i, 33, 34, 404.

Potash deposits, chemical changes in (Rózsa), A., ii, 80. from Dallol (Eritrea) (GIUA), A., ii, 448.

Potassamide, molten, electrolysis of (Wöhler and Stang-Lund), A., ii, 397.

Potassium, ionisation and resonance potentials of (TATE and FOOTE), A., ii, 94.

specific heat of (EASTMAN and RODE-BUSH), A., ii, 149.

occurrence and physiological value of, in plants (WEEVERS), A., i, 518.

Potassium bromate, effect of, on enzyme action (FALK and WINSLOW), A., i, 274.

polybromides and polyiodides, equilibria of (LINHART), A., ii, 68.

carbonate, action of alkali hydroxides on (Belloni), A., ii, 231.

cobalt carbonate (APPLEBRY and LANE), T., 612; A., ii, 313.

chloride, conductivity of solutions of (Weiland), A., ii, 56.

and sulphate, equilibrium of sod ium chloride and sulphate with water and (BLASDALE), A., ii, 231, 232.

dichromate, colloids produced by the action of stannous salts with (WITT), A., ii, 321.

hydrosulphide, action of a mixture of potassium cyanide and, on ethyl hypochlorite (GUTMANN), A., i, 98.

hydroxide, additive compounds of organic compounds with (Dehn and Merling), A., i, 67.

permanganate, use of, in an electric cell (WARRINGTON), A., ii, 97. preparation of N/100-solution of (HALVERSON and BERGEIM), A.,

ii, 123. oxidation of acetone by (WITZE-

mann), A., i, 58.

Potassium alum, crystal structure of (Niggli), A., ii, 315.

polysulphides (THOMAS and RULE), A., ii, 43.

Potassium organic compounds :--

codeine and narcotine (RAKSHIT), T., 467; A., i, 350.

cyanide, action of, on permeability (Оsтепноит), A., i, 472.

action of a mixture of potassium hydrosulphide and, on ethyl hypochlorite (GUTMANN), A., i, 98.

action of narcotics and, on waterfleas (BUYTENDYK), A., i, 468.

Potassium detection, estimation, and separation:—

detection of, by means of light-filters (Herzog), A., ii, 205.

estimation of (BLOUNT), A., ii, 174; (RHUE), A., ii, 274; (VURTHEIM), A., ii, 371; (STEEL), A., ii, 407; (HÜTTNER), A., ii, 454.

estimation of, gravimetrically (GAROLA and BRAUN), A., ii, 131.

estimation of, with the refractometer (Shippy and Burrows), A., ii, 131.

estimation and separation of sodium and (KUZIRIAN), A., ii, 82.

Potential of alloys (TAMMANN), A., ii,

produced by the flow of electrolytes through capillary tubes (KRUYT), A., ii, 289.

ionisation and resonance, of electrons (TATE and FOOTE), A., ii, 94.

normal, of ions, calculation of (HERZ-FELD), A., ii, 289.

Potential difference, formula for (FALES and VOSBURGH), A., ii, 424.

Powders, smokeless, estimation of acetone in (Pieroni), A., ii, 464.

one in (PIERONI), A., 11, 464.

Precipitates, formation and collection of

(BROTHER), A., ii, 124. flocculation of (Pickering), A., ii, 189.

settling of (Tillisch), A., ii, 368.

Pressure, internal, and solubility (Hilde-

BRAND), A., ii, 65.

Priceite as a distinct mineral species (LARSEN), A., ii, 119.

Propane, as-heptachloro-, cryoscopic constant of (Böeseken and Benedictus), A., ii, 150.

cycloPropane derivatives (Kohler, Hill, and Bigelow), A., i, 72; (Widman), A., i, 347, 393.

Propionic acid, esters, physical properties of (MATHEWS and FAVILLE); A., i, 153. Propionic acid, estimation of, and its separation from butyric and propionic acids (CROWELL), A., ii, 137. halogen-derivatives, relative stabilities of (SIMPSON), A., i, 250.

Propionylalanine, \$\beta\$-iodo- (Baumann and Ingvaldsen), A., i, 455.

3-Propionylcoumarin (WIDMAN), A., i,

1:2-Propionylenebenziminazole (MEYER and LÜDERS), A., i, 451.

2-Propionyl-4-methoxyphenol (v. Au-WERS and MÜLLER), A., i, 30.

6-Propionyl-3-methoxyphenol, 6-α-chloro- (v. Auwers and Müller), A., i, 30.

a-Propionyl-aβ-phenacylidenecoumaric acid, ethyl ester (WIDMAN), A., i, 348

3-Propionyl-3:4-phenacylidenecoumarin (WIDMAN), A., i, 348.

Propiophenone, a-bromo-, properties and reactions of (v. Auwers), A., i, 18.

α-Propoxy-β-ethylbutan-β-ol (PALo-MAA), A., i, 522.

α-Propoxy-β-methylpropan-β-ol (PALO-MAA), A., i, 522.

 α -n-Propoxy- β -n-propylpentan- β -ol (PALOMAA), A., i, 522.

n-Propyl iodide, relative activities of methyl iodide, ethyl iodide and, with sodium α- and β-naphthoxides (Cox), T., 666; A., ii, 356.

n- and iso-Propyl hydrogen phosphites, metallic salts of (MILOBENDZKI and SZWEJKOWSKA), A., i, 479.

a-n-Propylaminoglyoxylic acid, ethyl ester dichlorophenylhydrazone (Bülow and Hess), A., i, 42.

3-p-isoPropylbenzyl-1-benzylideneindene (BERNTHSEN), A., i, 487.

1-p-isoPropylbenzylideneindene (BERN-THSEN), A., i, 487.

3-p-isoPropylbenzylindene(Bernthsen), A., i, 487.

Propylcampholenic acid, and its amide and nitrile (HALLER and LOUVRIER), A., i, 397.

a-isoPropylcinnamic acid (Schaarschmidt, Georgeacopol, and Herzenberg), A., i, 432.

Propylene chlorohydrins, formation of (SMITH), A., i, 370.

3-isoPropylindene (THIELE and MERCK), A., i, 485.

4'-isoPropyl-2-phenylisatogen, 6-cyano-(Pfeiffer and Klinkert), A., i, 344.

Propylphosphinic acid, dipropyl ester (MILOBENDZKI and SZULGIN), A., i, 495.

2-Propylpiperidine, 2-α-hydroxy-, synthesis of (Läutenschlager and Önsager), A., i, 306.

4'-isoPropylstilbene, nitrocyano-derivatives (PFEIFFER and KLINKERT), A., i, 344.

2-Propyltetrahydrofuran, γ-bromo-(HAMONET), A., i, 421.

a-n-Propylthioglucoside (Schneider, Sepp., and Stiehler), A., i, 253.

Protablic acid, distribution of nitrogen in (Kennedy and Gortner), A., i, 83.

Proteins, chemistry of (HERZFELD and KLINGER), A., i, 47, 87, 241.

synthesis of, by moulds (Boas), A., i,

ionisation of, and their action with neutral salts (FENN; LOEB), A., i, 240.

hydrolysis of (GORTNER and HOLM), A., i, 84; (MCHARGUE), A., ii, 280; (GORTNER), A., ii, 416.

action of alkalis on (HULTON-FRAN-KEL), A., i, 132.

scission of, by bacteria (SASAKI; SASAKI and OTSUKA), A., i, 145.

mechanism of adsorption of electrolytes by (J. A. and W. H. WILSON), A., ii, 260.

effect of formaldehyde on the digestion of (Johanessohn), A., i, 48.

fixation of metals by (REBELLO-ALVES and BENEDICENTI), A., i, 323.

methylation of (HERZIG, LAND-STEINER, QUITTNER, and ZIPPERER), A., i, 509.

precipitation of, by narcotics (MEYER-HOF), A., i, 330.

action of nitric acid on (MÖRNER), A., i, 198; (KNOOP), A., i, 412.

formation of sugar from (DE CORRAL), A., i, 319.

absorption of water by (Henderson and Cohn; Fischer; Henderson), A., i, 316.

toxicity and utilisation of, in various species of animal (MAIGNON), A., i, 359.

influence of carbohydrates and fats on the nutritive power of (MAIGNON; AMAR), A., i, 416.

of cow's milk (OSBORNE, WAKEMAN, LEAVENWORTH, and NOLAN), A., i, 141.

in diet, relation of, to milk production (HART, HUMPHREY, and SMITH), A., i, 465.

detection of (Jolles), A., ii, 252.

electro-volumetric analysis of solutions containing (BAKER and VAN SLYKE), A., ii, 380. Proteins, estimation of, in physiological fluids (NAKASEKO), A., ii, 416. estimation of histidine in (Thrun and

TROWBRIDGE), A., i, 324.

Protein-sugar, estimation of, in blood (BIERRY and RANDOIN-VANARD), A., ii, 416.

Proteus vulgaris, biochemistry of (MIRANDA), A., i, 146.

Protoplasm, permeability of, to salts (TROENDLE), A., i, 244; (BROOKS), A., i, 471; (OSTERHOUT) A., i, 471, 472.

Protosiloxane. See Oxosilane.

Prout's hypothesis and the periodic system (LACOMBLÉ; SCHERINGA), A., ii, 105.

Prussian blue, retardation of formation of, in colloidal aluminium hydroxide (REITSTÖTTER), A., ii, 102; (Vorländer), A., ii, 301; (FREUNDLICH and REITSTÖTTER), A., ii, 393.

Pseudo-acids, intramolecular change involved in formation of (HANTZSCH),

A., ii, 299.

Ptilolite from Idaho (Koch), A., ii, 122.

Ptomaines, formation of, in wounds (BERTHELOT), A., i, 147.

Ptyalin, variation in the activity of (DE BRUYNE), A., i, 319.

influence of neutral salts on the action of (GROLL), A., i, 460.

action of ammonium salts on (Rockwood), A., i, 274.

Pulegenic acid, preparation of (WAL-LACH), A., i, 428.

Pulegenone, formation of, from menthone (WALIACH and GROTE), A., i, 544.

Pamp, water, prevention of back-flow in (MESTREZAT), A., ii, 192.

Purine bases, detection of, in drugs (Tunmann), A., ii, 465.

estimation of, in food-stuffs (v. Fel-LENBERG), A., ii, 415.

estimation of, in nucleic acids (FEUL-GEN), A., ii, 464.

Putrescine phosphotungstate (DRUM-MOND), A., i, 336.

Pyknometer, improved (Neidle), A., ii,

apparatus for cleaning (DUGARDIN), A., ii, 259.

Pyramidone, detection of (MAYRHOFER), A., ii, 465.

Pyran derivatives, preparation of (v. Braun and Köhler), A., i, 121.

Pyranol derivatives, synthesis of (CHATTERJI and GHOSH), T., 444; A., i, 303.

Pyranthridine (Scholl and Dischen-DORFER), A., i, 308. Pyranthridone, synthesis of (Scholl and 1 DISCHENDORFER), A., i, 307.

Pyranthrone, dibromo (Scholl and NEUBERGER), A., i, 484.

Pyrazole derivatives, constitution of (Dains and Harger), A., i, 238.

Pyridine, osmotic pressure of lithium chloride, silver nitrate and sucrose in (Koenig), A., ii, 432.

compounds of phenol and cresols with (Skirrow and Binmore), A., i, 547.

Pyridine bases, estimation of, in ammonia and its salts (HARVEY and SPARKS), A., ii, 180.

Pyridine-2:3:6-tricarboxylic acid (Eck-ERT and LORIA), A., i, 79.

Pyrimidines (Johnson), A., i, 81.

Pyrites, crystalline structure of (Beck-ENKAMP), A., ii, 9.

estimation of sulphur in (KARAOGLA-Now and P. and M. DIMITROW), A., ii, 126; (MARTIN), A., ii, 330.

Pyrolusite from Virginia (WATSON and WHERRY), A., ii, 448.

Pyronine, constitution of (v. BRAUN), A., i, 450.

Pyrquinacridine, and its salts (BRATZ and v. NIEMENTOWSKI), A., i, 313.

Pyrquinacridinecarboxylic acid (BRATZ and v. NIEMENTOWSKI), A., i, 312.

Pyrquinacridinedicarboxylic acid, and its salts and derivatives (BRATZ and NIEMENTOWSKI), A., i, 312.

Pyrrole, action of ethyl nitrite on (Cusmano), A., i, 77.

Pyrrole-blacks (ANGELI), A., i, 547.

Pyrryl methyl ketones, condensation of furfuraldehyde with (FINZI and Vессиі), А., і, 447.

Pyruvic acid, production of, biochemically, from lactic acid (MAZÉ and RUOT), A., i, 91.

physiological effects of injection of (Karczag), A., i, 205.

hydrazone of, reduction of (DARAPSKY and Prabhakar), A., i, 506.

Q.

Quantum theory and (REICHE), A., ii, 185. paramagnetism

Quartz, crystalline structure of (Becken-KAMP), A., ii, 9.

Quinacridonequinone, and dinitro-, and their salts (Lesnianski), A., i, 406.

Quinic acid, constitution of (EMDE), A., i, 265.

N-bromo-Quinicine, (RABE andKINDLER), A., i, 303.

Quinine, synthesis of (RABE and KINDLER), A., i, 303.

excretion of, and its estimation in urine and in blood (HARTMANN and ZILA), A., i, 328.

derivatives, action of, on diphtheria bacilli (Schaeffer), A., i, 93.

detection and estimation of, in blood and urine (RAMSDEN and LIPKIN), A., ii, 251.

detection and estimation of, in urine (Pépin), A., ii, 414, 415.

Quinine alkaloids, disinfectant action of, on pathogenic bacilli (BIELING), A., i, 243.

Quinol, in the bark of trees (v. LIPP-

MANN), A., i, 246. isoQuinoline derivatives, synthesis of (KAUFMANN and DÜRST), A., i, 122. Quinolines, amino-, and nitroamino-, and their toluenesulphonyl derivatives (KAUFMANN, ZELLER, and MAR-TON), A., i, 124.

Quinolinedicarboxylic acid (FARB-WERKE VORM. MEISTER, LUCIUS, &

BRÜNING), A., i, 548. Quinolyl chloride (KARRER), A., i, 39. 4-Quinolyl-2-pyrrylcarbinol (KARRER), A., i, 38.

4-Quinolyl-2-pyrryl ketone (KARRER), A., i, 38.

Quinones, binuclear, chemical action of light on (Mever and Eckert), A., ii,

Quinoneimide colouring matters, and their absorption spectra (KEHR-MANN and SANDOZ), A., i, 125, 126; ii, 344; (KEHRMANN, SANDOZ. ROCHAT, and BOUBIS), A., i, 126. cyclic, constitution of (KEHRMANN),

A., i, 449.

Quinonoid colouring matters, structure of (FIERZ and KOECHLIN), A., i, 549.

R.

Radioactive elements, nomenclature of (MEYER and v. Schweidler), A., ii, 94.

valency, average life and ray emission of (Kohlweiler), A., ii, 286. gases, distribution of, in the atmosphere (HESS and SCHMIDT), A., ii,

minerals in Bavaria (HENRICH), A., ii, 96.

from South India (SMEETH and Watson), A., ii, 96.

Italian (Francesconi, Granata, NIEDDU, and ANGELINO), A., ii, 421.

Radioactive minerals from Sardinia (SERRA), A., ii, 348.

substances, colloidal properties of (Lachs), A., ii, 95.

Radioactivity of water. See under Water.

Radiothorium, life-period of (MEITNER), A., ii, 347.

disintegration constant of (WALTER), A., ii, 51.

Radium, wave-length of the γ -rays of (KOHLRAUSCH), A., ii, 386.

(Kohlrausch), A., ii, 386. chemical action of the penetrating rays of (Kailan), A., i, 206.

properties of the active deposit of (RATNER), A., ii, 419.

emanation. See Niton.

sulphate, solubility of (LIND, UNDERwood, and WHITTEMORE), A., ii, 144.

estimation of (BARKER), A., ii, 371. estimation of, in sea-water from the China Sea (WRIGHT and HEISE), A., ii, 420.

Raffinase, occurrence of (KURIYAMA), A., i, 328.

Raffinose, physiological behaviour o (Kuriyama), A., i, 328.

Ragweed, constituents of the pollen of (KOESSLER), A., i, 519.

Rain-water. See under Water.

Randannite. See Diatomite.

Rats, influence of the growth-promoting substance on the nutrition and metabolism of (DRUMMOND), A., i, 358.

Rays, canal, effect of, on metallic salts (Ohlon), A., ii, 285.

Röntgen, spectra of (Vegard), A., ii, 93, 94, 144. absorption of (OWEN), A., ii, 284.

absorption of (OWEN), A., II, 284. absorption coefficients for (GLOCK-ER), A., ii, 144.

α-Rays, scattering of, and the magneton theory (Webster), A., ii, 144.

Reducing agents, reciprocal action of, in photochemical experiments (Woker and Maggi), A., i, 48.

Reduction in organic liquids (ABELOUS and ALOY), A., i, 150.

Refrection and entirel activity of liquid

Refraction and optical activity of liquid crystals (STUMPF), A., ii, 209.

Refractivity and keto-enolic tautomerism (LE BAS), A., ii, 281.

of saturated and unsaturated compounds (LE Bas), A., ii, 49, 281.

Refractometer, immersion, use of (RAN-DALL), A., ii, 367.

Rennin, action of (HAMMARSTEN), A., i, 459, 510.

estimation of, in gastric juice (MICHAELIS), A., ii, 468.

Resacetophenone methyl ether, ω -bromossee 4-Methoxyphenyl bromomethyl ketone, 2-hydroxys.

ω-chloro... See 4-Methoxyphenyl chloromethyl ketone, 2-hydroxy.
ω-iodo... See 4-Methoxyphenyl iodomethyl ketone, 2-hydroxy.

Resins (BAMBERGER and V. KLIMBURG), A., i, 120.

constituents of (ZINKE and LIEB), A., i, 398; (LIEB and ZINKE), A., i, 502.

Resorcinol, 6-chloroacetyl derivative (Sonn), A., i, 31.

1-methyl ether (Gomberg and Johnson), A., i, 112.

Respiration, measurement of (OSTER-HOUT), A, i, 462.

(plant), effect of anæsthetics on (HAAS), A., i, 470.

Respiratory exchange, apparatus for the study of (PRINCE; HENDERSON), A., i, 136.

metabolism (DE CORRAL), A., i, 319. influence of atropine and pilocarpine on (KELEMAN), A., i, 511.

Rhodoum:—
Rhodochlorides hydrated dehydr

Rhodochlorides, hydrated, dehydration of (DELÉPINE and BOUSSI), A., ii, 322.

Rhodium organic compounds:—
complex ammine salts of (JAEGER),
A., i, 7.

complex oxalates of (JAEGER), A., i, 3. Rice bran, fat from (WEINHAGEN), A.,

Ricinine (BÖTTCHER), A., i, 304.

Ricininic acid, preparation and derivatives of (Böttcher), A., i, 305.

Ricinstearolic acid, ethyl ester, diiodide of (RIEDEL), A., i, 289.

Rickets, effect of diet on the production of (MELLANBY), A., i, 280.

Ring closure, theory of (MEYER and LÜDERS), A., i, 450.

Rock salt. See Sodium chloride.

Rosaniline, synthesis of, by Heumann's reaction (FIERZ and KOECHLIN), A., i, 549.

Rotatory power and chemical constitution of optically active compounds (Clough), T., 526; A., ii, 255.

Rubber. See Caoutchonc.

Rubidium chloride, double chlorides of (VERMANDE), A., ii, 397.

estimation of, in plant ash (Robinson), A., ii, 132.

S.

"Saccharin" (o-benzoicsulphinide), analysis of (RICHMOND and HILL), A., ii, 339.

acid." "Saccharinearboxylic See Phthalicsulphinide.

Safety valve (RITTENHOUSE), A., ii, 358. Salicylaldehyde-2:4-dichlorophenylhydrazone (Bülow and Huss), A., i,

Salicylaldehydepiperylhydrazone (Weinhagen), T., 585; A., i, 395.

Salicylic acid, constitution of (WATERman), A., i, 154.

dissociation of, on heating (BAUR), A., ii, 157.

basic barium salt (Belloni

BACCI), A., i, 64. and its salts, behaviour of, in the organism (HANZLIK), A., i, 142.

methyl ester, association of, in benzene (INNES), T., 431.

Salicylic acid, p-amino-, phenyl ester, acetyl derivative. See Salophen.

Salicylideneaniline, 5-nitro-, and its acetyl derivative (v. Auwers), A., i, 196.

Salicylidenebenzoylacetone, and its anhydrohydrochloride (CHATTERJI and Gноsн), Т., 447.

Salicyluric acid, detection of, in urine (HANZLIK), A., i, 142.

Salinity, measurement of, by means of electrical conductivity (WEIBEL and Thuras), A., ii, 368.

Salophen (p-acetylaminophenyl salicylate), preparation of (BREWSTER), A., i, 393.

See Sodium chloride. Salt.

deposits, oceanic, equilibria in (JÄNECKE), A., ii, 70, 313.

from Dallol (Eritrea) (GIUA), A., ii, 448. Salts, electrical conductivity of aqueous solutions of (GHOSH), T., 449; A., ii, 215.

diffusion of, into colloids (TADOKORO), A., ii, 432.

prevention of creeping of, over the sides of dishes (Robinson), A., ii, 74. antagonistic action of (OSTERHOUT),

A., i, 471; (VAN OYEN), A., i, 472. of organic acids, optical and chemical processes in the formation of (HANTZSCH), A., ii, 4.

solutions, osmotic pressure (GHOSH), T., 707; A., ii, 392.

physiologically-balanced, origin of the conception of (Loeb), A., i. 359.

Samarium, atomic weight of (STEWART and James), A., ii, 44.

Samphire oil, constituents of {Delepine and DE BELSUNCE), A., i, 120.

matters of Sanderswood, colouring (O'NEILL and PERKIN), T., 125; A., i. 181.

Santal (O'NEILL and PERKIN), T., 136; A., i, 182.

n- and iso-Santalin, and their acetyl derivatives (O'NEILL and PERKIN), T., 127, 131; A., i, 182.

Santalone (O'NEILL and PERKIN), T., 138; A., i, 182.

Santol (O'NEILL and PERKIN), T., 137; A., i, 182.

Santonin, oxidation of, with organic peracids (Cusmano), A., i, 434.

Santonin, chloro- (Cusmano), A., i,

Saponification, velocity of. See Velocity. Saponins (Spiegel and Meyer), A., i,

excretion of, and their hamolytic action (Fieger; Bäck), A., i, 325.

Sarothamnine, and its derivatives (Valeur), A., i, 350.

Sarothamnus scoparius (broom), alkaloid from (VALEUR), A., i, 350, 403.

Saturated compounds, refractivity of (LE Bas), A., ii, 281.

Schiff's bases, bromides of (Franzen, WEGRZYN, and KRITSCHEWSKY), A.,

Scoparin, constitution and derivatives of (HERZIG and TIRING), A., i, 503.

Scopoline, degradation of (Hess), A., i,

Scurvy in guinea-pigs (HARDEN and ZILVA), A., i, 562.

Sea water. See under Water.

Sea weeds, biochemistry of (KYLIN), A., i, 476.

Selenium equilibrium of aluminium and (CHIKASHIGE and AOKI), A., ii, 114. equilibrium of antimony and (CHIKA-SHIGE and FUJITA), A., ii, 116.

equilibrium of, with cadmium and with zinc (Chikashige and Kuro-SAWA; CHIKASHIGE and HIKOsaka), A., ii, 112.

equilibrium of, with iodine and with sulphur (Beckmann and Platz-MANN), A., ii, 229.

Selenium hydride. See Hydrogen selenide.

oxide, new (v. Konek), A., ii, 309. dioxide, reduction of, in the Bunsen flame (PAPISH), A., ii, 309.

compound of oxalic acid and (GASS-MANN), A., i, 2.

Selenic acid, action of iron on (Tur-TON), A., ii, 193.

volumetrically estimation of, (Moser and Prinz), A., ii, 451.

Selenious acid, estimation of, volumetrically (Moser and Prinz), A., ii, 451.

Selenium organic compounds, aromatic MEISTER, (FARBWERKE VORM. Lucius, & Brüning), A., i, 218.

Selenium, detection of, in sulphuric acid (PALET), A., ii, 127.

Selenomethylene-blue bromide. 3:6-Tetramethyldiaminophenazselenonium bromide.

Selenoisotrehalose (WREDE), A., i, 7. a-Semicarbazido-\beta-phenylpropionic

acid, ethyl ester (DARAPSKY and Berger), A., i, 508.

Semicarbazones (v. Auwers), A., i,

Serum, formation of enzymes in, after injection of sucrose (Rohmann), A., i, 138.

invertase in (Boissevain), A., i, 321. estimation of ammonia in (WIESS-

MANN), A., ii, 332.

estimation of the hydrogen ion concentration of (Homer), A., i, 137. Serums, clinical value of freezing-point determinations of (EIGENBERGER), A., i, 512.

nark liver oil, cons (Tsujimoto), A., i, 89. constituents Shark liver

Shattuckite, identity of plancheite and (ZAMBONINI), A., ii, 170.

Shogaol, and its derivatives (Nomura), A., i, 447.

Siaresinol, and its derivatives (ZINKE and LIEB), A., i, 398.

Silane, mono- and di-bromo- (Stock and Somieski), A., ii, 110.

tetrachloro- (STOCK, SOMIESKI, and WINTGEN), A., ii, 111.

Silica. See Silicon dioxide.

Silica-glass, use of, in mercury stills (HOSTETTER and SOSMAN), A., ii, 76. Silicic acid. See under Silicon.

12-Silicomolybdic acid (Rosenheim and JAENICKE), A., ii, 78.

Silicon, resistance limit of mixed crystals of iron and (TAMMANN), A., ii, 235.

Silicon compounds, nomenclature of (Stock), A., ii, 110.
Silicon hydrides (Stock and Somieski),

А., іі, 110, 361; (Sтоск, Sомівski, and Wintgen), A., ii, 110, 111. dioxide (silica), equilibrium alumina, lime and (NEUMANN), A., ii, 441.

equilibrium of alumina, magnesia and (RANKIN and MERWIN), A., ii, 199.

solubility of (LENHER and Mer-

RILL), A., ii, 43. filtration of (NICOLARDOT KOENIG), A., ii, 241.

Silicic acid, occurrence of, in feathers of birds (Gonnermann), A., i, 465.

gels, preparation of (HOLMES), A., ii, 440.

Silicon :-

Silicic acid, zeolitic, estimation of, in soils (Gedroitz), A., ii, 370.

Silicates, estimation of alkalis in (WENGER and BRANGE), A., ii, 275.

Silicon organic compounds (GRÜTTNER and Krause), A., i, 132; (Bygdén), A., i, 134.

Silicon, estimation of, in ferrosilicon (Nicolardot and Koenig), A., ii, 407.

10. and 12-Silicotungstic acids (Rosen-HEIM and JAENICKE), A., ii, 78.

Silk, cocoon, constituents of (INOUE and HIRASAWA), A., i, 560.

Silver, atomic weight of (GUYE), A., ii, 112.

rate of solution of, in chromic acid (VAN NAME and HILL), A., ii, 104.

Silver alloys, with copper and gold, resistance of, to chemical reagents (TAMMANN), A., ii, 447.

with lead and bismuth or gold (Goto), A., ii, 365.

with gold, resistance of, to chemical reagents (TAMMANN), A., ii, 445.

Silver bases (silverammines), vapour tension of (EPHRAIM), A., ii, 313.

Silver salts, first discovery of the action of light on (BORUTTAN), A., ii, 345.

Silver arsenide (ZAPPI and LANDA-BURU), A., ii, 398.

nitrate, osmotic pressure of, in pyridine (KOENIG), A., ii, 432.

equilibrium of ammonium nitrate, barium nitrate and (DE BAAT), A., ii, 190.

action of sodium carbonate with, in solid form (PARKER), T., 402; A., ii, 222.

Silver organic compounds :-

acetylide, lecture experiments with (EGGERT and SCHIMANK), A., ii,

carbide. See Silver acetylide.

salts of phenols (HUNTER and JOYCE), A., i, 63.

Silver estimation :-

estimation of, volumetrically (Schneider), A., ii, 205.

recovery and estimation of, in albumose silver solutions (MAUE), A., ii, 454.

Silver-asbestos (BINDER), A., ii, 453. Sitostan (Windaus and Rahlén), A., i, 389.

Sitostandicarboxylic acid (WINDAUS and Rahlén), A., i, 388.

Sitostanol and its acetate (WINDAUS and RAHLÉN), A.. i, 388.

Sitostanone (WINDAUS and RAHLÉN), A., i, 388.

Snow, nitrogen, chlorine and sulphates in (Peck), A., i, 96. detection of hydrogen selenide in

(GASSMANN), A., ii, 309. Soaps, refractive index of solutions of (Lifschitz and Brandt), A., ii,

adsorption of solutions of (Lenher and Bishop), A., ii, 155.

γ-alkali resin, colloidal properties of

(PAUL), A., ii, 100. estimation of fatty acids in (Boss-HARD and COMTE), A., ii, 462.

Soap bubbles, use of, as models of crystal structure (MARSHALL), A., ii, 37.

Soap films, stratification of (Perrin), A., ii, 418.

Soap solutions, hydrolysis of (McBain and Bolam), T., 825.

Soda lime, action of alcohol with (CAR-ROLL), A., i, 210.

Sodamide, molten, electrolysis (Wöhler and Stang-Lund), A., ii, 397.

use of, in syntheses (HALLER and BAUER), A., i, 24, 428; (HALLER and Louvrier), A., i, 397.

Sodium, resonance and ionisation potentials of electrons in the vapour of (TATE and FOOTE), A., ii, 287.

specific heat of (EASTMAN and RODE-BUSH), A., ii, 149.

action of solutions of, in liquid ammonia on antimony (Peck), A., ii, 168.

Sodium alloys \mathbf{with} mercury and strontium, equilibrium of sodium and strontium chlorides with (SMITH and Braley), A., ii, 67.

Sodium salts, physiological effects of injection of (GREENWALD), A., i,

arsenite, action of ethyl hypochlorite with (GUTMANN), A., i, 98.

borate, neutralisation of hydrogen peroxide with (CAMBE and DIACONO), A., ii, 368.

carbonate, action of barium sulphate with, in solid form (PARKER), T., 397; A., ii, 222.

action of cuprous chloride with, in solid form (PARKER), T., 405; A., ii, 222.

action of silver nitrate with, in solid form (PARKER), T., 402; A., ii, 222.

hydrogen carbonate, transport carbon dioxide by solutions of (Buckmaster), A., i, 355.

Sodium cobalt and copper carbonates (APPLEBEY and LANE), T., 610; A., ii. 313.

percarbonate, stable, preparation of (HENKEL & Co.), A., ii, 232.

chloride (rock salt), crystalline structure of (GROSZ), A., ii, 169.

equilibrium of solutions of strontium chloride and, with amalgams of sodium and strontium (SMITH and Braley), A., ii, 67.

dissociation of (Thompson), A., ii,

and sulphate, equilibrium of potassium chloride and sulphate with water and (Blasdale), A., ii, 231, 232.

hydroxide, corrosion of glass by (VAN NIEUWENBURG), A., ii, 19.

hypochlorite, decomposition of solutions of (BOUVET), A., ii, 397.

stability of Dakin's solution of (Wischo and Freiberger), A., ii, 198.

end points of indicators in dilute solutions of (Cullen

Austin), A., ii, 265. nitrate, use of, in the manufacture of ammonium sulphate (Dawson), T., 675; A., ii, 363.

Disodium nitrite (MAXTED), A., ii, 17.

Sodium sulphate, equilibrium of ammonium sulphate, water and (DAWson), T., 675; A., ii, 363; (MATIGNON and MEYER), A., ii, 66, 67, 302.

solubility of, as a means of measuring temperatures (RICHARDS and YNGVE), A., ii 58.

ammonium sulphate, preparation of (MATIGNON and MEYER), A., ii,

sulphide, action of iodine with (Ehrlich), A., ii, 125.

polysulphides (THOMAS and RULE), A., ii, 43.

thiosulphate, alteration in strength of a solution of (Wäterman), A., ii,

paratungstate, use in estimation of the metal in cyanides (KUZIRIAN), A., ii, 82.

Sodium organic compounds, synthesis of (MADINAVEITIA and RANEDO), A., i. 415.

acetylide, action of, on aldehydes and ketones (HESS and MUNDERLOH), A., i, 291.

alkyloxides, kinetics and constitution of aqueous-alcoholic solutions of (Wegscheider), A., ii, 394.

Sodium organic compounds, codeine, cotarnine, and narcotine (RAKSHIT), T., 466; A., i, 350.

cyanide, hydrolysis of (Worley and Browne), A., i, 60.

Sodium estimation and separation :estimation of (RHUE), A., ii, 274.

estimation of, with the refractometer (SHIPPY and BURROWS), A., ii,

estimation and separation of potassium and (McCrudden and Sargent), A., ii, 82.

Soils, acidity of (SPURWAY), A., i, 152; GILLESPIE and WISE), A., i, 368. acidity of, measured by the inversion

of cane-sugar (RICE and Osugi), A., i, 520.

absorption of salts by the zeolitic bases in (GEDROITZ), A., i, 519.

ammonification in (MIYAKE), A., i, effect of ammonium phosphate on

(Allison), A., i, 248. effect of ammonium sulphate on (Lip-

man and Gericke), A., i, 248. relation of bacteria to the lime require-

ments of (BEAR), A., i, 206. benzoic acid and p-hydroxybenzoic

acid in (WALTERS), A., i, 152. effect of boron compounds on (Cook and WILSON), A., i, 332.

effect of quicklime on (HAGER), A., i, 247.

distribution of some rarer metals in (ROBINSON, STEINKOENIG, and MILLER), A., i, 331.

distribution of nitrogen in (Morrow

and FETZER), A., i, 248. action of sulphur on (SHEDD), A., i,

alkali, reclamation of (BARNES and Ali), A., i, 152.

saline, improvement of (GEDROITZ), A., i, 520.

mechanical and physical analysis of

(RICHTER), A., ii, 280. estimation of humus in (JAKOBSEN), A., ii, 136.

estimation of the hygroscopic coefficient of (ALWAY, KLINE, and Mc-Dole), A., ii, 47.

estimation of zeolitic silicic acid in (GEDROITZ), A., ii, 370.

Soil extracts, estimation of nitrogen in (Davisson), A., ii, 370.

Solanaceæ, poisonous plants in (PETRIE), A., i, 420.

Solar spectrum, ammonia in the (Fowler and Gregory), A., ii, 282.

water vapour band in the (FOWLER), A., ii, 281.

CXIV. ii.

Solids, structure of (COMPTON), A., ii, 300. structure and properties of (PRATO-Longo), A., ii, 428.

ionic frequency of (BERNOULLI), A.,

adsorption of gases by (LANGMUIR), A., ii, 430.

reactions between (PARKER), T., 396; A., ii, 221.

Solubility, measurements of (LLOYD), A., ii, 221.

effect of internal pressure on (HILDE-BRAND), A., ii, 36, 65.

in ternary mixed liquids (HOLMES), T., 263; A., ii, 188.

Solution, changes in volume during (BAXTER), A., ii, 65.

of substances in absolute sulphuric acid (Oddo and Casalino), A., ii, 352.

Solutions, theory of (HOLMES), T., 263; A., ii, 188.

absorption of light by (HANTZSCH), A., ii, 2.

magnetic susceptibility of (QUARTA-ROLI), A., ii, 426.

ionisation in (KENDALL and Booge), A., ii, 37.

vapour pressure of (VAN KLOOSTER), A., ii, 74.

aqueous, fluidity and specific volume of (HERZ), A., ii, 153.

double salts (TORRANCE and Knight), A., ii, 299.

formation of additive compounds in (KENDALL, Booge, and Andrews), A., ii, 36.

ideal dilute, kinetic theory of (Short-ER; TINKER), A., ii, 9.

iso-piestic (Bousfield), A., ii, 293. non-aqueous, electrical conductivity of (Gнози), Т., 627; А., іі, 348.

Solvents, non-aqueous, reactions in (FRY and DONNELLY), A., ii, 167. Specific volume. See Volume.

Spectra, distribution of intensity in, excited by cathode rays (Holts-Mark), A., ii, 283.

of isotopes (HARKINS and ARONBERG), A., ii, 89.

of meteorites (CROOKES), A., ii, 25. absorption, of solutions of alkali and alkaline earth metals in liquid ammonia and methylamine (GIBson and Argo), A., ii, 417.

of indicators, and their use in volumetric analysis (TINGLE), A., ii,

236.

of quinone-imide colouring matters (KEHRMANN and SANDOZ), A., i, 125, 126; ii, 344; (KEHEMANN, SANDOZ, ROCHAT, and BOUBIS), A., i, 126.

Spectra, emission, relation between ioni sation potential and (HARDTKE)

A., ii, 385.

of gases (HAMBURGER), A., ii, 210. high-frequency, and structure of atoms (SOMMERFELD; KROO), A., ii, 303. line, origin of (HEMSALECH), A., ii,

384.

ultra-redreflection, of nitrates (SCHAEF-ER and SCHUBERT), A., ii, 282. resonance (WOOD), A., ii, 90; (WOOD

and Kimura), A., ii, 91.

Röntgen ray (VEGARD), A., ii, 93, 94, 144.

Spectral series, differences of atomic frequency and number in (Bell), A., ii, 383.

Spectrochemistry (v. Auwers), A., ii, 341.

and constitution of tautomeric compounds (v. Auwers), A., ii, 381. of cyclic compounds (v. Auwers),

A., ii, 343. erulites with helicoid

Spherulites with helicoidal winding, artificial coloration of (GAUBERT), A., ii, 355.

Spinacene, and its derivatives (Chapman), T., 458; A., i, 295.

Spirits, estimation of alcohol in (NAC and LAL), A., ii, 411.

Spleen, active substances in (Berlin) A., i, 360.

Squalene (TSUJIMOTO), A., i, 89.

Stachydrine, isolation and identification of, in lucerne hay (STEENBOCK), A., i, 476.

Phosphotungstate (DRUMMOND), A., i, 337.

Standard solutions, method for taking aliquot portions of (MILLER), A., ii, 80.

Stannic salts. See under Tin.

Stanni- and Stanno-chlorides. See under Tin.

Starch, constitution of (SARASIN), A., i, 375.

soluble, formation of, by moulds (Boas), A., i, 330.

distillation of, in a vacuum (PICTET and SARASIN), A., i, 59.

hydrolysis of (BLAKE), A., i, 254 (v. EULER), A., i, 414.

action of diastase on (BERCZELLER).
A., i, 131.

action of formaldehyde on (Maggi and Woker), A., i, 375.

compound of iodine and (BERCZELLER), A., i, 101.

formation of lactose from (RÖHMANN), A., i, 138.

reactions of, in solution (GROLL), A., i, 292.

Stars, shooting, phenomena of (Véron-NET), A., ii, 439.

Stearic acid, nephelometric value of (Csonka), A., ii, 277.

cerous salt (MORRELL), T., 116; A., i, 98.

Stereochemical studies (Holmberg), A., i, 523; (Holmberg and Lenander), A., i, 529.

Steric hindrance (REICH, SALZMANN, and KAWA), A., i, 14; (v. BRAUN and MINTZ), A., i, 127; (v. BRAUN, ARKUSZEWSKI, and KÖHLER), A., i, 257; (KLAUS and BAUDISCH), A., i, 430.

influence of, on biological processes (BAUDISCH and KLAUS), A., i, 53.

Stevensite, occurrence of (GLENN), A., ii, 121.

Stilbene, p-amino-α-cyano-. See α-Phenylcinnamonitrile, α-p-aminop-amino-ω-cyano-. See α-Phenylcinnamonitrile, p-amino-.

4-nitro-3-cyano-, and 2-nitro-4-cyano-4'-hydroxy- (Pfeiffer and Klin-

кект), А., і, 344.

Stilbene-4:4'-dicarboxylic acid, methyl ester (Meyer and Hofmann), A., i, 67.
Still for preparation of pure water

(Moseley and Myers), A., ii, 428. for mercury, made of silica-glass (Hostetter and Sosman), A., ii, 76.

Still-head for distillation of ammonia (HUTIN), A., ii, 128.

Stizolobin (Johns and Finks), A., i, 316.

Stizolobium niveum (Chinese velvet bean), globulin of (Johns and Finks), A., i, 316.

Streptococcus lactis. See Bacterium acidi lactis.

Strontium alloys with mercury and sodium, equilibrium of sodium and strontium chlorides with (SMITH and BRALEY), A., ii, 67.

Strontium bromide and chloride, transition temperatures of, and their use in thermometry (RICHARDS and YNGVE), A., ii, 58.

chloride, equilibrium of solutions of sodium chloride and, with amalgams of sodium and strontium (SMITH and BRALEY), A., ii, 67.

Strontium detection and estimation:

detection of, in presence of barium (RAIKOW), A., ii, 275.

estimation of (WINKLER), A., ii, 241. Strychnos nux vomica, chlorogenic acid in the seeds of (TUNMANN), A., ii, 453.

Styrene, bromonitro-derivatives (Reich, Agamirian, Koehler, Gajkowski, and Lueeck), A., i, 262.

Styrenes, ω-nitro-, catalytic reduction of (Sonn and Schellenberg), A., i, 9.

Styrylchloride, o -iodo- (Weitzenböck), A., i, 494.

Styryl methyl ketone, m-hydroxy-(NOMURA and NOZAWA), A., i, 439.

Substance, C₆H₁₀ON₂, from acetaldehyde-ammonia and dimethyl diketone (DIELS), A., i, 449.

C₆H₁₂O₂N₂, from acetaldehyde-ammonia and dimethyl diketone (DIELS), A., i, 449.

C₈H₇O₅N₅, from heating 1-nitro-3:5diketopiperazine (Dubsky and Grä-

NACHER), A., i, 188.

C₈H₁₇NI₂, from dimethyliodomethylδ-iodopentylammonium iodide and silver oxide and potassium iodide (VALEUR and LUCE), A., i, 102.

C₃H₁₀O₂N₂, from furfuraldehyde, dimethyl diketone and nitric acid

(DIELS), A., i, 449.

C₉H₁₂O₃N₂, from furfuraldehyde and dimethyl diketone (Diels), A., i, 449.

C₉H₁₇ON, and its salts, from formaldehyde and α-2-piperidylpropan-β-ol (HESS and EICHEL), A., i, 36.

(HESS and EIGHEL), A., i, 36.

C₁₀H₁₆O₂, and their bromides, from menthone (Wallach and Grote), A., i, 544.

C₁₀H₁₇O₃N₃, from acetaldehyde-ammonia and dimethyl ketone (Diels), A., i, 449.

C₁₁H₈O₂N, from 2-acetylpyrrole and furferaldehyde (Finzi and Vecchi), A., i, 447.

C₁₁H₁₂ON₂, from benzaldehyde and dimethyl diketone (DIELS), A., i,

449.

C₁₁H₁₄O₂N₂, from benzaldehyde and dimethyl diketone oxime (DIELS), A., i, 449.
 C₁₂H₁₀O₃, from heating sodium β-

C₁₂H₁₀O₃, from heating sodium β-resorcylate (MRAZEK), A., i, 72.

C₁₃H₁₁ON, from α-naphthylamine hydrogen arsenate and α-naphthylamine (Boon and OGILVIE), A., i, 461.

C₁₃H₁₃O₂N, from 2-acetyl-3:5-dimethylpyrrole and furfuraldehyde (FINZI and VECCHI), A., i, 447.

 $C_{19}H_{16}O_2N_2$, from cinnamaldehyde and dimethyl ketone (Diels), A., i, 449. $C_{14}H_{18}O_3$, from mowric acid and potassium hydroxide (SPIEGEL and

MEYER), A., i, 303.

C₁₄H₁₈O₄, from leaves of Adonis vernalis (HEYL, HART, and SCHMIDT), A., i, 208.

C₁₅H₁₅O₃N, from 2:4-diacetyl-3:5-dimethylpyrrole and furfuraldehyde (FINZI and VECCHI), A., i, 448.

Substance, C₁₆H₁₇O₄N (two), from ethyl acetyldimethylpyrrolecarboxylates and furfuraldehyde (Finzi and Vecchi), A., i, 447.

C₁₆H₁₂O₄N₂S, from thiocyanic acid and benzoyl-m-nitrophenylethylene ox-

ide (Bodforss), A., i, 231.

C₁₆H₁₃O₂N₂S, from thiocarbamide and henzoyl-m-nitrophenylethylene oxide (Bodforss), A., i, 231.

C₁₇H₁₆O₃, and its phenylhydrazone, from acetylacetone and salicylaldehyde (CHATTERJI and GHOSH), T., 448; A., i, 303.

C₁₈H₁₃O₄N, from 2:5-diacetylpyrrole and furfuraldehyde (Finzi and

Vессиі), A., i, 448.

C₁₈H₁₈O₇N₆, from pinewood and pnitrophenylhydrazine (Wichel-HAUS and LANGE), A., i, 151.

C₁₈H₃₃O₅P, from ricinstearolic acid and phosphorus haloids (RIEDEL),

A., i, 212.

C₁₈H₃₅O₅P, from ricinolic acid and phosphorus haloids (RIEDEL), A., i, 212.

C₁₈H₂₁O₂N₃S, from di-p-phenetylthiocarbamide (REUTTER), A., i, 497.

C₁₈H₂₂O₃N₃Cl, from di-p-phenetylthiocarbamide (REUTTER), A., i, 497.

C₂₁H₁₄O₂, and its derivatives, from oxidation of methylenedi-\$\mathcal{\textit{B}}\$-naphthol (Kohn and Ostersetzer), A., i, 501.

 $\begin{array}{cccc} C_{24}H_{22}O_5, & from & acetylacetone & and \\ salicylaidehyde & (Chatterji & and \\ Ghosh), T., 449 ; A., i. 303. \\ C_{27}H_{20}O_3 & (+\frac{1}{2}H_2O), from benzoylacet- \end{array}$

C₂₇H₂₀O₃ (+ ½H₂O), from benzoylacetone and salicylaldehyde (Chatterji and Ghosh), T., 446.

Substitution, effect of, in chemical reactions (Franzen), A., i, 456.

Succinnamic acids, thiol-, stereochemistry of (HOLMBERG and LENANDER), A., i, 529.

Succinic acid, detection of, in tissues (Thunberg), A., ii, 87.

Succinic acids, iodo-, stereochemistry of (Holmberg), A., i, 523.

Succinylmalonic acid, constitution of esters of (v. Auwers and Auffenberg), A., i, 436.

Sucrase, action of (Colin and Chaudun), A., i, 414; ii, 357.

Sucrose (saccharose: cane-sugar), influence of temperature and concentration on the refractive index of solutions or (MILLER and WORLEY), A., ii, 181.

heat of combustion of (SWIENTO-SLAWSKI), A., ii, 32.

Sucrose (saccharose: cane sugar), osmotic pressure of, in pyridine (KOENIG), A., ii, 432.

inversion of (v. EULER; COLIN and CHAUDUN), A., i, 414.

by hydrochloric acid (WATERMAN).

A., i, 101, 154. inversion and estimation of (Rose), A., ii, 247.

detection of, by the Selivanov reaction (WEEHUIZEN), A., ii, 279.

detection of, in milk (Elsdon), A., ii,

Sugar, formation of, from proteins (DE Corral), A., i, 319.

in blood (GUTMANN and ADLER), A., i, 50; (Ege), A., i, 356.

diabetes, rate of dialysis of (KLEINER), A., i, 356.

influence of morphine on (Ross), A., i, 356.

metabolism of. See Metabolism.

excretion of, in urine (BENEDICT, OSTERBERG, and DUDLEY; BENE-DICT, OSTERBERG, and NEUWIRTH), A., i, 322.

detection of, in urine (Ruoss), A., ii,

estimation of, in blood, microchemically (EGE; BANG), A., ii, 278; (BANG and HATLEHOEL), A., ii, 279.

estimation of, in urine (MAYER), A., ii, 85.

Sugars, autoxidation of (Berczeller and Szegö), A., i, 101.

effect of formaldehyde on the reducing action of (Maggi and Woker), A.,

action of, on bronchial secretion (Lo Monaco), A., i, 466.

colloidal chemistry of the detection of. by Fehling's method (Fischer and HOOKER), A., ii, 278.

aldose, estimation of (COLIN and LIE-VIN), Λ., ii, 461.

reducing, estimation of, in urine (Folin and McEllroy), A., ii, 207.

estimation of, in urine by Cam-midge's method (GARROW), A., ii, 245.

γ-Sugars, condensation of (Cunning-HAM), T., 604; A., i, 374.

o-, m-, and p-Sulphamidobenzoic acids, uranyl salts (Müller), A., i, 383.
3-Sulphamidophthalic acid, and

and its methyl ester (ZINCKE and SCHÜR-MANN), A., i, 551.

Sulphanilic acid. See Aniline-p-sulphonic acid.

Sulphazone colouring matters (HERZOG), A., i, 310.

Sulphides, estimation of, by oxidation with potassium iodate (DEAN), A., ii,

Sulphites. See under Sulphur.

Sulphite turpentine. See Turpentine. Sulphoanisyl phenylethyl ketone, and its ammonium sait (PFEIFFER and NEGREANU), A., i, 19.

m-Sulphobenzeneazo-m-phenetidine, and its derivatives (REVERDIN, RILLIET,

and VERNET), A., i, 456.

3-Sulphobenzoic acid, 6-amino-, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 262.

Sulphocarboxylic acids, azides and hydrazides of (SCHRADER), A., i, 44,

o-Sulphohydrazidobenzohydrazide hydride, and its benzylidene deriva-

tive (SCHRADER), A., i, 197. Sulphonic acid, C₁₈H₁₀O₆S, from 1phenylnaphthalene-2:3-dicarboxylic anhydride \mathbf{and} sulphuric acid (Schaarschmidt and Korten), A., i, 433.

Sulphonic acids, bromo- and chloroamino-, salts of (TRAUBE and v. DRATHEN), A., ii, 108.

hydroxy-, aromatic, preparation of condensation products of (BADISCHE Anilin- & Soda-Fabrik), A., i, 261.

Sulphonylides (Anschütz), A., i, 424. Sulphonylphenylcarbamic acid, o-amino-, ethyl ester and anhydride (SCHRADER), A., i, 44.

Sulphosalicylic acid, amino-, aminobenzovl derivatives (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 113.

molecular complexity Sulphur, (Kellas), T., 903.

allotropy of (ATEN), A., ii, 193.

and its influence on the melting point (BECKMANN, PAUL, and LIESCHE), A., ii, 308.

colloidal, refractive index of (LIFschitz and Brandt), A., ii, 253.

equilibrium of, with iodine and with selenium (BECKMANN and PLATZ-MANN), A., ii, 229.

equilibrium of water and, at high temperatures (LEWIS and RANDALL; RANDALL and v. Bichowsky), A., ii, 158.

use of, as a cryoscopic solvent (BECK-MANN and PLATZMANN). A., ii, 218.

action of sulphuryl and thionyl chlorides on (North and Thomson), A., ii, **2**29.

action of, on organic compounds (SZPERL; SZPERL and WIERUSZ-Kowalski), A., i, 492.

Sulphur, seleniferous, composition of (Brown), A., ii, 116.

action of, on crops and soils (SHEDD), A., i, 96.

metabolism of. See Metabolism.

Sulphur compounds, reversible reactions of (Lewis, Randall, and v. Bi-chowsky), A., ii, 158.

Sulphuryl chloride, action of, on phosphorus and on sulphur (North and Thomson), A., ii, 229.

Thionyl chloride, action of, on phosphorus and on sulphur (North and Thomson), A., ii, 229.

Sulphur dioxide, mobility of ions in vapour of (YEN), A., ii, 213.

solubilities of (LLOYD), A., ii, 221. liquid, solubility of hydrocarbons in (Moore, Morell, and Egloff), A., i, 285.

oxidation of, in air (GENELIN), A., ii. 438.

catalytic oxidation of, in presence of platinum and rhodium (WENG-ER and URFER), A., ii, 230.

Sulphurous acid, estimation of, in presence of sulphuric, thiosulphuric, and trithionic acids (BILLETER and Wavre), A., ii, 330.

Sulphites, aromatic, preparation of (Badische Anilinδt

Fabrik), A., i, 297.

Sulphuric acid, thermal properties of (Porter), A., ii, 296.

fuming, thermal properties (Porter), A., ii, 296.

free energy of dilution of (RANDALL and Cushman), A., ii, 147.

absolute, condition of substances in solution in (Oddo and Casalino), A., ii, 189, 352.

reduction of, by carbon monoxide (MILBAUER), A., ii, 360.

action of, on olefines (Brooks and Humphrey), A., i, 286.

detection of selenium in (PALET), A., ii, 127.

gravimetric estimation of, by the barium sulphate method (KARAO-GLANOW), A., ii, 47, 126, 239, 369; (WINKLER), A., ii, 451.

estimation of, in presence of sulphurous, thiosulphuric, and tri-thionic acids (BILLETER and WAVRE), A., ii, 330.

Sulphates, detection of (Deniges), A., ii, 82.

estimation of, volumetrically (VANS-TEENBERGER and BAUZIL), A., ii, 451.

estimation of, in rain and snow (Peck), A., i, 96.

Sulphur :---

Sulphates, estimation of, in urine (FLOHE), A., ii, 239.

Hyposulphites (BINZ, HUETER, and Goldenzweig), A., i, 4.

Thiosulphuric acid, estimation of, in presence of sulphuric, sulphurous, and trithionic acids (BILLETER and Wavre), A., ii, 330.

Trithionic acid, estimation of, in presence of sulphuric, sulphurous, and thiosulphuric acids (BILLETER and WAVRE), A., ii, 330.

Sulphur organic compounds :-

β-naphthyl chlorides. See Naphthalene, B-chlorothiol-.

Sulphur estimation:

estimation of, in ores (HAWLEY), A., ii, 172.

estimation of, in copper ores (MAIER), A., ii, 175.

estimation of, in presence of mercury (François), A., ii, 271.

estimation of, in pyrites (KARAO-GLANOW and P. and M. DIMITROW), A., ii, 126.

estimation of, volumetrically, in pyrites and slag (MARTIN), A., ii, 330. estimation of, in urine (HAMBURGER),

A., ii, 47. Sulphuryl chloride. See under Sulphur. d-Sumaresinol, and its derivatives (LIEB and Zinke), A., i, 503.

Sunlight, formation of nitrites from nitrates in, and their assimilation by green leaves (Moore), A., i, 365.

Suprarenal glands and carbohydrate metabolism (Kuriyama), A., i, 324. Suprarenine. See Adrenaline.

Surface tension of solutions of alkaloids (Berczeller and Seiner), A., i, 143. of solutions of enzymes (Berczeller), A., i, 131.

of mixed liquids (Morgan and GRIGGS), A., ii, 38; (MORGAN and SCARLETT), A., ii, 39; (BERCZELLER), A., ii, 390.

Systems, binary. See Binary systems. disperse, optical properties of (LIF-SCHITZ), A., ii, 181; (LIFSCHITZ and BRANDT), A., ii, 253.

absorption of light and size of particles in (PIHLBLAD), A., ii, 418. univariant, equilibria in (Morey and

WILLIAMSON), A., ii, 66.

Tantalum, are spectrum of (Josewski), A., ii, 25. estimation of, in iron alloys (TRAVERS), A., ii, 177.

Tartaric acid, amides and imides of (CASALE), A., i, 535.

(CASALE), A., i, 535. p-aminophenol hydrogen ester (CASALE), A., i, 535.

dimethyl ester, association of, in benzene (INNES), T., 433.

detection of salts of (Curtman, Lewis, and Harris), A., ii, 87.

estimation of, in presence of malic acid by an optical method (WILLAMAN), A., ii, 249.

Taste, variation of, with constitution (Nomura and Nozawa), A., i, 438.

Taurine, preparation of (SCHMIDT and WATSON), A., i, 255.

excretion of (SCHMIDT, V. ADELUNG, and WATSON), A., i, 281.

Tautomeric compounds, spectrochemistry and chemical constitution of (v. Auwers), A., ii, 381.

Tautomerism, keto-enolic, and refractivity (LE Bas), A., ii, 281.

Tellurium, equilibrium of aluminium and (Chikashige and Nosé), A., ii, 114.

Tellurium dioxide, reduction of, in the Bunsen flame (PAPISH), A., ii, 309.

Telluric acid, and its alkali salts, colloidal modifications of (ROSENHEIM and JANDER), A., ii, 194.

Temperature, measurement of, by the solubility and transition points of salts (RICHARDS and YNGVE), A., ii, 58.

measurement of, by means of eutectic alloys (STEINMETZ), A., ii, 58.

relation between vapour pressure and (HAM, CHURCHILL, and RYDER), A., ii, 292.

high, reactions at (Lewis), A., ii, 30. low, measurement of (Cath and Onnes), A., ii, 218, 294.

Terephthalic acid, and nitro-, menthyl alkyl esters of (Cohen and de Pennington), T., 57; A., ii, 93.

Terpenes and ethereal oils (WALLACH), A., i, 428; (WALLACH, WALTER, and WOLFF), A., i, 439; (WALLACH, GROTE, HALLSTEIN, JESSEN, and WOODMAN), A., i, 440; (WALLACH, GERHARDT, and JESSEN), A., i, 442; (WALLACH and STANDACHER), A., i, 444; (WALLACH and PELIKAN), A., i, 445.

Terpene group, hydrogenation of acids, alcohols, and aldehydes of the (PAAL), A., i, 181.

Terpineol, action of hypochlorous acid on (Slawiński), A., i, 502.

Tetra-acetylglucosido-α-hydroxybutyric acid, ethyl ester (Fischer and Anger), A., i, 526.

Tetrabenzoylglucose, and its compound with pyridine (Fischer and Noth), A., i, 226.

Tetracarbimide, identity of, with cyanuric acid (Walters and Wise), A., i, 60.

s.-Tetraethyldiisobutyldistannane (GRÜTTNER), A., i, 160.

s.-Tetraethyldi-n-propyldistannane (GRÜTTNER), A., i, 160.

ar-Tetrahydroaceto-α-naphthalide, 4mono- and 2:4-di-nitro- (GREEN and ROWE), T., 959.

Tetrahydroanhydroepiberberine, and its salts (PERKIN), T., 510; A., i, 349.

Tetrahydrobetulene (SEMMLER, JONAS, and RICHTER), A., i, 301.

Tetrahydrobetulol (SEMMLER, JONAS, and RICHTER), A., i, 301.

ac- and ar-Tetrahydro-α- and -β-carbamidonaphthalenes (Schroeter and Thomas), Λ., i, 418.

Tetrahydrodiphenyl (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 534. Tetrahydrodoremol (SEMMLER, JONAS,

and ROENISCH), A., i, 119.
Tetrahydrodoremone (SEMMLER, JONAS,

and ROENISCH), A., i, 119.
Tetrahydroelemene, products of ozonisation of (SEMMLER and LIAO), A., i,

Tetrahydroelemol, derivatives of (Semm-LER and LIAO), A., i, 25.

Tetrahydroeucarvone, bromo- and hydroxy-, and their derivatives (WALLACH and STANDACHER), A., i, 444.

Tetrahydroeucarvylamine, and its derivatives (Wallach and Standacher), A., i, 444.

Tetrahydroferulene (SEMMLER, JONAS, and ROENISCH). A., i, 119.

Tetrahydro-1-methylnaphthalene-8-carboxylic acid (WILLSTATTER and JAQUET), A., i, 392.

Tetrahydronaphthalene, absorption and excretion of, in the body (Schroeter and Thomas), A., i, 418.

ar-Tetrahydronaphthalene, a-chloro-, and 1-chloro-2:4-dinitro- (GREEN and ROWE), T., 971.

Tetrahydronaphthalene series (GREEN and Rowe), T., 955.

ar-Tetrahydro-a-naphthol, 2- and 4mono-, and 2:4-di-nitro- (GREEN and ROWE), T., 968.

ar-Tetrahydro-α-naphthol-4-sulphonic acid, and its sodium salt, and 2-nitro-(GREEN and ROWE), T., 967.

ar-Tetrahydro-α-naphthylamine, preparation and derivatives of, and 4mono- and 2:4-di-nitro- (GREEN and Rowe), T., 955. ac-Tetrahydro-β-naphthylamine, and its derivatives, constitution and physiological activity of (WASER), A., i, 515.

Tetrahydro-a-naphthylcyanomethylamine (v. Braun, Arkuszewski, and Köhler), A., i, 258.

5:6:7:8-Tetrahydro-α-naphthylmethylamine, and its derivatives (V. BRAUN, ARKUSZEWSKI, and KÖHLER), A., i, 258.

Tetrahydropyran 4-carboxylic acid (v. Braun and Köhler), A., i, 121.

Tetrahydropyran-4:4-dicarboxylic acid, and its ethyl ester (v. Braun and Kohler), A., i, 121.

1:2:3:4-Tetrahydroquinoline-2-carboxylic acid, 2:4-dihydroxy-, and its methyl ester (Heller), A., i, 310.

Tetralin. See Tetrahydronaphthalene. Tetramethyl-3:3'-diaminodiphenylmethane, and its methiodide (Scholl and Lenko), A., i, 506.

3:9-Tetramethyldiaminophenazoxonium nitrite, and its absorption spectra (KEHRMANN and SANDOZ), A., i, 126.

3:6-Tetramethyldiaminophenazselenonium bromide (KARRER), A., i, 237.

Tetramethyl-3-methylbenzidine, and its derivatives, and 6:6'-dinitro-(v. Braun and Mintz), A., i, 127.

Tetramethyl γ-methylgalactoside (Cun-NINGHAM), T., 599; A., i, 374.

Tetramethyl \(\beta\)-methylglucoside, preparation of (HAWORTH and LEITCH), T.,

Tetramethyl-m-phenylenediamine, 4:6dinitro- (Borsche, Löwenstein, and Quast), A., i, 13.

3:3:5:5-Tetramethyltetrahydrofuran, 4-hydroxy- (Kohn and Neustädter), A., i, 477.

Tetraphenylfuran, 3:4-di-p-nitro-(Francis), A., i, 26.

Tetraphenylpyrrole, synthesis of (G. M. and R. ROBINSON), T., 639; A., i, 448.

Tetraphenylthiophen (SZPERL and WIERUSZ-KOWALSKI), A., i, 492.

Tetrazole, cyano-, action of hydrazine hydrate on (Lifschitz and Donath), A., i, 353.

Tetrazolecarbohydrazidine, hydrazonium salt of, and its derivatives (LIFSCHITZ and DONATH), A., i, 353.

Thallium in volcanic deposits (BRUN), A., ii, 323.

in lead sulpharsenate minerals of Switzerland (BRUN), A., ii, 323.

Thallium alloys with antimony and with lead, electrolytic potential of (Bekier), A., ii, 425.

Theobromine, estimation of (EMPRY and SPENCER), A., ii, 380.

Thermal conductivity of mixed gases (Weben), A., ii, 216.

Thermite, definition of (SCHIMANK), A., ii, 296.

Thermochemical processes, law of (TRAUTZ), A., ii, 151. studies (LAGERLÖF), A., ii, 31, 62,

353.

Thermochemistry, standard unit for, of organic compounds (Swientoslaw-

SK1), A., ii, 32. Thermodynamics, third law of, in relation to entropy (LEWIS and GIBSON), A., ii, 29.

Thermometer, ebullioscopic determinations with an ordinary (Kiplinger), A., ii, 294.

Thermo-regulator, improved (FERGU-SON; MILBAUER), A., ii, 257.

Thermostat, high temperature (Haughton and Hanson), A., ii, 98.

Thermotropy and phototropy (Senier and Gallagher), T., 28; A., i, 109.

Thienylphenylbenzoin (Thomas and Couderc). A., i, 504.

Thiocarbamides, aromatic, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 113.

Thiocarbimides and thiocyanates (JOHN-SON and TICKNOR), A., i, 256.

aromatic, addition of ethyl sodioacetoacetate to (WORRALL), A., i, 161.

a-Thiocarbiminopropionic acid. ethyl ester, and its derivatives (Johnson and Ticknor), A., i, 256.

Thiocyanates and thiocarbimides (Johnson and Ticknon), A., i, 256.

Thiocyanic acid, production of, in animals (Dezani), A., i, 360, 563.

methyl ester, equilibrium of methylthiocarbimide and (Gillis), A., i, 157.

Thio-esters, estimation of, in urine (Cordier), A., ii, 204.

Thionacetanilide, p-bromo- (WORRALL), A., i, 162.

Thionaphthenequinone-anilide, condensation of sulphazone with (Herzog), A., i, 311.

Thioncarbonic acid, autoxidation of derivatives of (BILLETER and WAVRE), A., i, 371.

Thionmalon-p-bromoanilic acid (Wor-RALL), A., i, 162.

Thionmalon-8-naphthylamic acid (Wor-RALL), A., i, 162.

Thionmalon-p-toluidic acid (WORRALL), A., i, 162.

Thionyl chloride. See under Sulphur.

Thorium, life-period of (MEITNER), A., ii, 347.

ratio of mesothorium to (McCov and Henderson), A., ii, 422.

Thorium detection and estimation: —

detection of, colorimetrically, with pyrogallolaldehyde (KASERER), A., ii, 244.

estimation of (GOOCH and KOBAYASHI), A., ii, 177.

Thymic acid, preparation and properties of (FEULGEN), A., i, 413; (FEULGEN and LANDMANN), A., i, 554.

Thymol, ultrafiltration of supersaturated solutions of (Berczeller), A., ii, 100.

Thymolsulphophthalein, use of, as an indicator in acidimetry (CLARK and Luвs), А., іі, 449.

Thymyl sulphite (BADISCHE ANILIN- & Soda-Fabrik), A., i, 297.

Thyroid, active principle of (Kendall), A., i, 560.

effect of feeding with, on carbohydrate metabolism (Kuriyama), A., i, 139.

Thyroxin (KENDALL), A., i, 560.

Time, importance of, in gravimetric analysis (KARAOGLANOW), A., ii, 239,

Tin, grey, crystalline structure of (BIJL and Kolkmeyer), A., ii, 443.

action of nitric acid on (KLEINschmidt), A., ii, 400.

distribution and elimination of, in the body (SALANT, RIEGER, and TREUT-HARDT), A., i, 326.

Tin oxychloride (Keller), A., ii, 45.

Stannic chloride, compound of benzoylm-nitrophenylethylene oxide with (Bodforss), A., i, 230.

fluoride, behaviour of, in solution (Furman), A., ii, 269.

Stannic- and Stanno-chlorides, inorganic, preparation of (DRUCE), A., ii, 234.

Stannous salts, colloids produced by the action of potassium dichromate with (WITT), A., ii, 321.

Metastannic acid, and its compounds (KLEINSCHMIDT), A., ii, 400.

organic compounds (GPUTTNER, KRAUSE, and WIERNIK), A., i, 135; (GRÜTTNER), A., i, 159.

Stanni- and Stanno-chlorides, organic (DRUCE), T., 715; A., i, 535.

tri- and tetra-alkyls (GRUTTNER and

KRAUSE), A., i, 158. diethyl-n-amyl and -€-bromoamyl bromides (GRÜTTNER, KRAUSE, and Wiernik), A., i, 135.

triethyl-n-amyl and -e-bromoamyl (GRUTTNER, KRAUSE, and WIERNIK), A., i, 135.

Toluene compounds, Me = 1.

Tin organic compounds :-

dimethylandtrimethyl-e-bromoamyls (GRÜTTNER, KRAUSE, and Wiernik), A., i, 135.

triphenyl haloids, preparation of (KRAUSE), A., i, 415.

Tin estimation:--

timation of, in wo (Powell), A., ii, 410. estimation wolfram

Tin ore, analysis of (Golick), A., ii, 135. Tin plate, metallographic examination

of (MAYER), A., ii, 443. estimation of lead in, volumetrically

(Deininger), A., ii, 455.

Tissues, influence of the swelling of colloids in cells on (SPEK), A., i, 278.

animal. See Animal tissues.

line spectrum (DE Titanium, GRAMONT), A., ii, 49.

of aluminium, separation manganese, zirconium and (Brown), A., ii, 84.

Tolane chlorides, preparation of (DAVIDson), A., i, 160.

Toluene, absorption spectra of (MASSOL and FAUCON), A., ii, 210.

compound of hydrogen bromide with (MAASS and RUSSELL), A., i, 534.

preparation of chlorine derivatives of, substituted in the side chain (GIBBS and GEIGER), A., i, 160.

estimation of, in gases (H. S. and M. D. DAVIS and MACGREGOR) A., ii, 411.

Toluene, chlorinated, analysis of (Lubs and CLARK), A., ii, 460.

p-nitro-, bromination of (BREWSTER), A., i, 160.

Toluene-p-sulphodichloroamide, paration of (KRAUSS and CREDE), A., i, 62.

Toluene-o- and -p-sulphonamides, freezing-point curves of mixtures of (Mc-KIE), T., 799; A., i, 534.

Toluene-o-sulphonic acid, uranyl salt (Müller), A., i, 383.

Toluene-oand -p-sulphonic acids, analysis of mixtures of (McKIE), T., 799; A., i, 534.

1-p-Toluenesulphonylguvacine (FREU-DENBERG), A., i, 403.

1-p-Toluenesulphonylpiperidine-(3?)carboxylic acid, (3:4?) dihydroxy-(FREUDENBERG), A., i, 403.

Toluic acids, esterification of (FREAS and REID), A., ii, 160.

Toluic acids, hydroxy-, ammonium salts (McMaster and Wright), A., i, 263. o-Toluidine stanni- and stanno-chlorides (DRUCE), T., 716; A., i, 535.

Toluene compounds, Me = 1.

p-Toluidine, equilibrium of nitrobenzenes with (KREMANN and PETRITSCHEK), A., ii, 68.

o- and p-Toluidine, action of n-butyl chloride on (REILLY and HICKIN-BOTTOM), T., 974.

p-Toluidinobenzaldehyde, 2-m-nitro-, and its oxime (MAYER and STEIN), A., i, 37.

o-Toluidinoformaldehyde 2:4-dichlorophenylhydrazone (Büllow and Huss), A., i, 197.

a-o-Toluidinoglyoxyl-amide and -hydrazide, dichlorophenylhydrazones of, and their derivatives (Bülow and Huss), A., i, 196.

1-a-o-Toluidinoglyoxylamido-2:5:dimethylpyrrole-3:4-dicarboxylic acid, ethyl ester, 2:4-dichlorophenylhydrazone (Bülow and Huss), A., i, 197.

a-Toluidinoglyoxylic acid, 2:4-dichlorophenylhydrazone (Bülow and Huss),

A., i, 197.

α-Toluidinoglyoxylic acids, ethyl ester dichlorophenylhydrazones (BϋLow and Huss), A., i, 43.

p-Toluidinomethyl α-hydroxybenzyl hyposulphite (BINZ, HUETER, and GOLDENZWEIG), A., i, 6.

Toluonitrile, 5-nitro-4-hydroxy-(Borsche, Lowenstein, and Quast), A., i, 12.

 A., 1, 12.
 p-Toluoylbenzoic acid, 2-ω-dibromo-(CHEMISCHE FABRIK GRIESHEIM-ELEKTRON), A., i, 264.

Toluoylphenylethylene oxides, amino-, acetyl derivatives (Jörlander), A., i, 21.

Tolyl sulphites (Badische Anilin- & Soda-Fabrik), A., i, 297.

o-Tolyl ethyl ether, 5-bromo- (v. Auwers), A., ii, 343.

methyl ether, 6-nitro- (SIMONSEN), T., 781; A., i, 542.

p-Tolyl-\$\beta\$-benzylhydrazine, m-amino-, and its sodium sulphonate (Franzen and Mondlange), A., i, 458.

3-Tolyl-2-benzylquinoxaline, 5'-amino-, acetyl derivative (Jörlander), A., i, 21.

p-Tolyl-n-butylnitroamine, nitro-derivatives of (Reilly and Hickinbortom), T., 992.

o- and p-Tolyl-n-butylnitrosoamines, and their nitro-derivatives (Reilly and Hickinbottom), T., 979, 989.

Tolylene-3:4-sulphonylide-5:5'-disulphonic acid, and its salts and chloride (Anschutz and Hodenius), A., i, 425.

m-Tolyl a-ethoxyethyl ketone, m-4hydroxy-, p-nitrophenylhydrazone (v. AUWERS), A., i, 18. Toluene compounds, Me = 1.

m-Tolyl ethyl diketone, 4-hydroxy-, dip-nitrophenylhydrazone (v. Auwers), A., i, 195.

m. Tolylglyoxal, 4-hydroxy-, di-p-nitrophenythydrazone (v. Auwers), A., i,

194.

m-Tolylglyoxylic acid, 6-amino-, and its salts (MARTINET), Λ., i, 345.
o-Tolyl α-hydroxystyryl ketone, 5-

amino-, acetyl derivative (Jor-LANDER), A., i, 21.

m-Tolylideneanilines, nitrohydroxy-, and their acetyl derivatives (v. Auwers), A., i, 196.

1-p-Tolylideneindene (BERNTHSEN), A., i. 487.

1-N-p-Tolyl-C-methyl-1:2-anthraquinoneiminazole (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 192.

m Tolyl methyl diketone, 4-hydroxyphenylhydrazones (v. Auwers), A., i,

194.

2-m-Tolyl-3-methylquinoxaline, 4'-hydroxy-, and its methyl ether (v. Auwers and Müller), A., i, 28.

Tolyloxides, sodium, decomposition of, by carbon dioxides (DENBIGH), A., i, 535.

m-Tolyl isopropyl diketone, 4-hydroxy-, di-p-nitrophenylhydrazone (V. Auwers), A., i, 195.

2-m-Tolyl-3-isopropylquinoxaline, 4'hydroxy- (v. Auwens and Müller), A., i, 29.

Tolylquinolinedicarboxylic acid, hydroxy- (Farbwerke vorm. Meister, Lucius, & Brüning), A., i, 548.

m-Tolyl a-semicarbazidoethyl ketone, 4-hydroxy-, semicarbazone (v. Auwers), A., i, 195.

m-Tolyl a-semicarbazidopropyl ketone, 4-hydroxy-, semicarbazones (V. Auwers), A., i, 196.

Toxins, theories of the action of (KAR-RER), A., ii, 431.

Trees, relation between osmotic concentration of leaf sap and height of leafinsertion in (HARRIS, GORTNER, and LAWRENCE), A., i, 151.

catechol and quinol in the bark of (v. Lippmann), A., i, 246. isoTrehalose, thio (WREDE), A., i, 7.

Triacetonamine, nitroso-, velocity of catalysis of (McBain and Bolam), T., 825.

3:4:5-Triacetoxybenzaldehyde, and its p-nitrophenylhydrazone (Rosenmund and Zetzsche), A., i, 300.

3:4:5-Triacetoxybenzoic acid, and its salts and derivatives (Fischer, Bergmann, and Lipschitz), A., i, 173.

- 3:4:5-Triacetoxybenzoylfructosediacetone (FISCHER and NOTH), A., i, 227.
- 3:4:5-Triacetoxybenzoylglucosediacetone (Fischer and Bergmann), A., i, 225.
- 4-(3':4':5'-Triacetoxybenzoyloxy)-3:5diacetoxybenzoic acid, and its derivatives (FISCHER, BERGMANN, and LIPSCHITZ), A., i, 174.

Triacetylfructoseacetone (FISCHER and NOTH), A., i, 227.

- Triacetylgallic acid. See 3:4:5-Triacetoxybenzoic acid.
- **B-Triacetylmethyl** *l*-arabinoside (Hubson and Dale), A., i, 335.
- a-Triacetylmethyl-d-xyloside (Hudson and Dale), A., i, 355.
- Triacetyl-d-xylose (Hudson and Dale), A., i, 335.
- Triisoamylamine phosphotungstate (DRUMMOND), A., i, 336.
- Triarylcarbinols, action of formic acid on (KOVACHE), A., i, 539.
- Triarylmethane colouring matters, preparation of (Farbwerke vorm. Meister, Lucius, & Brüning), A., i, 228.
- Tribenzoylfructose and acetone and tribromo-(Fischer and Noth), A., i, 227. Tri-n-butyl phosphite (MILOBENDZKI
- and Sachnowski), A., i, 478; (Milo-Bendzki and Szulgin), A., i, 495.
- Triisobutylene (MILOBENDZKI and SACH-NOWSKI), A., i, 478.
- Tridymite, melting point of (FERGUSON and MERWIN), A., ii, 362.
- Triethyl-β-bromoethylarsonium bromide (CHEMISCHE WERKE GRENZACH), A., i, 295.
- Triethylethanolarsonium hydroxide, and its salts (CHEMISCHE WERKE GRENZACH), A., i, 295, 534.
- p-Triethylsilyltriethylstannylbenzene (GRÜTTNER and KRAUSE), A., i, 133.
- p-Triethylsilyltrimethylplumbylbenzene (GRÜTTNER and KRAUSE), A., i, 133.
- Trigalloylglucose (FISCHER and BERG-MANN), A., i, 224.
- Trigalloylglucoseacetone (Fischer and Bergmann), A., i, 224.
- Triglycineamidedianilide (Dubsky and Granacher), A., i, 189.
- Triglycinediamideanilide, and its hydrochloride (Dubsky and Gränacher), A., i, 189.
- Trigonelline, reduction products of (Winterstein and Weinhagen), A., i. 35.
- 1:2:3-Trimethoxybenzene, 4:6-dinitro-(Pollecoff and Robinson), T., 656; A., i, 428.
- Trimethylamine phosphotungstate (DRUMMOND), A., i, 336.

- Trimethyl-β-bromoethylarsonium bromide and pierate (CHEMISCHE WERKE GRENZACH), A., i, 295.
- 3:4:5-Trimethylcarbonatobenzaldehyde, and its p-nitrophenylhydrazone (ROSENMUND and ZETZSCHE), A., i, 300.
- 1:3:5-Trimethylcoumaran-2-one, and its derivatives and 1-hydroxy- (v. Auwers and Müller), A., i, 30; (v. Auwers), A., i, 195.
- Trimethylenediglycine, \(\beta\)-hydroxy-, and its salts (KRAUSE), A., i, 157, 337.
- 1:7-Trimethyleneisatin, and its derivatives (Martinet), A., i, 351.
- Trimethylethanolarsonium hydroxide, and its salts (CHEMISCHE WERKE GRENZACH), A., i, 295, 533.
- Trimethylethylenediamine, and its salts (v. Braun, Heider, and Müller), A., i, 407.
- Trimethyliodomethylammonium iodide, reduction of (Valeur and Luce), A., i, 155.
- 1:5:7-Trimethylisatin, and its phenylhydrazone (Heller and Baum-GARTEN), A., i, 235.
- ββδ-Trimethyl-n-pentane, αγδ-trihydroxy- (Kohn and Neustädter), A., i, 477.
- cis-1:2:3-Trimethylcyclopentane-1-carboxylic acid, 2-hydroxy-, and its salts and derivatives (Noves and Skinner), A., i, 66.
- 1:2:2-Trimethyl-Δ⁴-cyclopentene-1-carboxylic acid, and its methyl ester (Noyes and Skinner), A., i, 65.
- 4(2':2':3')-Trimethylcyclopentyl-2 methyl-4-allylpyrrolidone (HALLER and LOUVRIER), A., i, 397.
- 2:3:6-Trimethylpyridine, and its salts (ECKERT and LORIA), A., i, 79.
- α-Trimethylstannyl-ε-trimethylplumbylpentane (GRÜTTNER, KRAUSE, and WIERNIK), A., i, 135.
- Trioxyanhydromethylberberine (PER KIN), T., 747.
- Trioxymethylene, action of, on hydrocarbous in presence of aluminium chloride (FRANKFORTER), A., i, 105.
- Triphenylamine, p-nitroso-, and its hydrochloride (Piccard, Kharasch, and Fleck), A., i, 385.
- Triphenylmethane, absorption spectra of (Massol and Faucon), A., ii, 210. specific heat and heat of fusion of (HILDEBRAND, DUSCHAK, FOSTER, and BEEBE), A., ii, 29.
- Triphenylmethane coloring matters and their absorption spectra (KEHRMANN), A., i, 311; (KEHRMANN and SANDOZ), A., ii, 344.

Triphenylmethyl (Gomberg and Johnson), A., i, 111.

 $\alpha\beta\delta$ -Triphenyl-n-valeric acid, $\alpha\gamma\delta$ -trihydroxy-, and its tribenzoate (Bod-FORSS), A., i, 230.

dl-Triphosphonucleic acid, brucine salt (THANNHAUSER and DORFMÜLLER), A., i, 47.

Tripropyl phosphite (MILOBENDZKI and Szulgin), A., i, 495.

Tripropylamine phosphotungstate (Drummond), A., i, 336.

Triticum sativum. See Wheat.

3:4:5-Tri-triacetoxybenzoylglucoseacetone (FISCHER and BERGMANN), A., i,

Tri-3:4:5-trimethoxybenzoylglucose (FISCHER and BERGMANN), A., i,

Tri-3:4:5-trimethoxybenzoylglucoseacetone (FISCHER and BERGMANN), A., i, 225.

Tri-3:4:5-trimethylcarbonatobenzoylglucoseacetone (Fischer and Berg-MANN), A., i, 224.

Tropic acid, preparation of (CHEMISCHE WERKE GRENZACH), A., i, 300.

synthesis of (MÜLLER), A., i, 223. Truxillic acids, structure of (DE Jong), A., i, 172.

Tryptophan, formation of kynurenic acid from, in the animal organism (MATsuoka), A., i, 467.

Tryptoproteases, detection of (FRANcesco), A., ii, 340.

Tuba, a poison for fish (Ishikawa), A., i, 94.

Tubatoxin (ISHIKAWA), A., i, 94.

Tuberculosis, biochemistry and chemotherapy of (HUBER), A., i, 361.

Tubes, exhausted, method of weighing (Guichard), A., ii, 16.

Tubing, glass and rubber, tight connexions between (KIPLINGER), A., ii, 360.

Tumours, nitrogenous extractives of (DRUMMOND), A., i, 142.

Tungsten, arc spectrum of (Belke), A., ii, 142.

atomic heat of (Worthing), A., ii, 217.

quinquevalent, chemistry of (Collen-BURG), A., ii, 267.

Tungsten compounds, analysis of, by volatilisation in carbon tetrachloride vapour (JANNASCH and LEISTE), A., ii. 460.

Tungsten :-

Chlorotungstites (Collenburg), A.,

Oxalotungstites (Collenburg), A., ii, 268.

Tungsten estimation :-

estimation of, colorimetrically (TRAvers), A , ii, 176.

estimation of, in the powdered metal (Hodes), A., ii, 21.

estimation of, in presence of titanium (FENNER), A., ii, 372.

Tungsten steel, structure of, and its changes under influence of heat (HONDA and MURAKAMI), A., ii, 316.

Tungstenite (Wells and Butler), A., ii, 46.

Turpentine, sulphite (Schorger), A., i,

Tyrosine, decomposition of, by bacteria (RHEIN), A., i, 363; (TSUDJI), A., i,

esters and hydrazides of, and their derivatives (Curtius and Donselt), A., i, 46.

estimation of, in presence of unic acid (HERZFELD and KLINGER), A., ii,

U

Ultra-filtration of colloidal solutions (OSTWALD), A., ii, 391.

apparatus (Ostwald), A., ii, 192, 264; (DE WAARD; KOBER), A., ii, 359.

Unsaturated compounds, refractivity of (LE Bas), A., ii, 49, 281.

chemical and pharmacological characteristics of (v. Braun and Köhler), A., i, 162.

condensation of (PRINS), A., i, 261. Uracil-6-acetic acid, 2-imino-, and its guanidine salt, and 5-nitro- (Work-RALL), A., i, 409.

Uræmia, experimental, physical chemistry of (BIENENSTOCK and CSAKI), A., i, 205.

Uranium, third isotope of (PICCARD), A., ii, 6.

effect of fluorescein on the activity of, in physiological fluids (ZWAARDE-MAKER), A., ii, 182.

Uranium salts, photolysis of (BAUER; HATT), A., ii, 143.

Uranium organic compounds, complex

uranyl (MÜLLER), A., i, 382. Uranium, estimation of, in presence of

formic acid (HATT), A., ii, 143. Uranothallite, probable identity

liebigite and (LARSEN), A., ii, 120. Urea (carbamide), action of urease on (YAMAZAKI), A., i, 414.

estimation of, in blood (Peltrisor), A., ii, 414.

estimation of, in placenta tissue (HAMMETT), A., ii, 250.

Urea (carbamide), estimation of nitrogen in, gasometrically (Renaud), A., ii, 405.

See also Carbamide.

Urease, formation of (JACOBY), A., i, 54. preparation of, from bacteria (JACOBY), A., i, 132.

action of aldehydes on (JACOBY), A., i, 274.

influence of neutral salts on the action of (GROLL), A., i, 201.

action of, on urea (YAMAZAKI), A., i, 414.

Urethane, molecular weights of metallic salts in (Bruni), A., ii, 432.

mechanism of the synthesis of urea from (Werner), T., 622; A., i, 380.

Uric acid, action of hydrogen peroxide on (Venable), A., i, 409; (Moore and Thomas), A., i, 410. phosphotungstate (Drummond), A., i,

337.

metabolism. See Metabolism.

estimation of, in blood (Morris), A., ii, 251; (Curtman and Lehrmann), A., ii, 464.

MANN), A., ii, 464. estimation of, in urine and blood (Tervaert), A., ii, 250.

estimation of, in physiological fluids (Kowarsky), A., ii, 87.

estimation of, in presence of tyrosine (Herzfeld and Klinger), A., ii, 415.

Uridinephosphoric acid, barium salt (LEVENE), A., i, 130.

brucine salt (THANNHAUSER and DORF-MÜLLER), A., i, 47; (LEVENE), A., i, 130.

Urine, acidosis in (BARNETT; VA SLYKE), A., i, 204.

elimination of arsenic and mercury in (DURET), A., i, 561.

carbon dioxide content of (DENIS and MINOT), A., i, 360.

creatine and creatinine in (Rose, Dimmitt, and Bartlett), A., i, 361

erepsin in (HEDIN and MASAI), A., i, 90.

excretion of foreign substances in (Berczeller), A., i, 141.

destruction of organic compounds in (CORDIER), A., ii, 204.

human, occurrence of phosphorus in (Feigl), A., i, 514.

excretion of saponins in (FIEGER), A., i, 325.

excretion of sugar in (BENEDICT, OSTERBERG, and DUDLEY; BENEDICT, OSTERBERG, and NEUWIRTH), A., i, 322.

Urine, analytical methods relating to:—analysis of (LEE), A., ii, 140.

detection of acetone in (TRUNKEL), A., ii, 179: (WAGENAAR; BOHR-ISCH), A., ii, 250.

detection of albumin in (LENZ), A., ii, 88; (BARBE and JUSTIN-MUELLER), A., ii, 467.

detection of ammonia in, by nesslerisation (SUMNER), A., ii, 239.

detection of bile pigments in (FOUCHET), A., ii, 415.

detection of citric acid in (AMBERG and McClure), A., i, 141.

detection of mercury in (GUTMANN), A., ii, 409.

detection of methylene blue in (TRI-BONDEAU), A., ii, 416.

detection of phenols in (RHEIN), A., i, 363.

detection of pieric acid in (ROZIER), A., ii, 179; (GANASSINI), A., ii, 374.

detection of salicyluric acid in (HANZ-LIK), A., i, 142.

detection of sugar in (Ruoss), A., ii, 337.

detection and estimation of arsenic and mercury in (DURET), A., i, 561.

detection and estimation of quinine in (RAMSDEN and LIPKIN), A., ii, 251; (PEPIN), A., ii, 414, 415.

estimation of acetoacetic acid, acetone, and \$\beta\$-hydroxybutyric acid in (VAN SLYKE), A., ii, 86.

estimation of acetone in (SABEL), A., ii, 464.

estimation of albumin in, volumetrically (JUSTIN-MUELLER), A., ii, 23.

estimation of ammonia in (WIESS-MANN), A., ii, 332; (LECLERE), A., ii, 369.

estimation of chlorine in (VOTOČEK), A., ii, 330.

estimation of dextrose in (GURTOV; MAYER), A., ii, 85; (HUGENHOLIZ; BENEDICT and OSTERBERG), A., ii, 246.

estimation of dextrose in, colorimetrically (ISAACSON), A., ii, 246.

estimation of dextrose in, polarimetrically (Frenchs and Mannheim), A., ii, 246.

estimation of nitrogen in, by Kjeldahl's method (C. and M. OEHME), A., ii, 452.

estimation of pentose in (Testoni), A., ii, 85.

estimation of phosphates in (Angio-LANI), A., ii, 240. Urine, analytical methods relating to:estimation of phosphorus in (SATO), A., ii, 406.

estimation of quinine in (HARTMANN

and ZILA), A., i, 328. estimation of the reducing power of

(Ruoss), A., ii, 206. estimation of reducing sugars in (Folin and McEllroy), A., ii, 207; (GARROW), A., ii, 245.

estimation of sulphur in (HAMBURG-

ER), A., ii, 47.

estimation of sulphates in (Flohr), A., ii, 239. estimation of thio-esters in (Cordier),

A., ii, 204.

estimation of uric acid in (TERVAERT), A., ii, 250.

Urobilinogen (DE GRAAFF), A., i, 510. Urochromogen, estimation of (BAUMGÄR-TEL), A., ii, 208.

Urotropine. See Hexamethylenetetramine.

Uvitic acid, dimethyl ester (Schorger), A., i, 61.

Uzara root, constituents of (HENNIG), A., i, 94.

Uzaridin, and its triacetyl derivative (HENNIG), A., i, 95.

Uzarin (HENNIG), A., i, 95.

V.

Vaccinius myrtillus (myrtle), pigment in the berries of (MARINI), A., i, 519.

Valency (HINSBERG), A., ii, 106; (LOR-ING), A., ii, 396.

nature of (Ciamician and Padoa), A., ii, 74.

subsidiary (EPHRAIM and ROSENBERG), A., i, 389; ii, 115; (EPHRAIM), A., ii, 313.

isoValeraldehyde, a bromo-, and its diethyl acetal (MADINAVEITIA and PUYAL), A., i, 373.

Valeric acid, isobutyl ester, physical properties of (MATHEWS and FA-

VILLE), A., i, 153.

isoValeric acid, abnormal behaviour of, with aldehydes in the Perkin reaction (SCHAARSCHMIDT, GEORGEA-COPOL, and HERZENBERG), A., i, 431.

isoamyl ester, inhibition of foaming by (Fiske), A., ii, 358.

 $iso Valeroxybenzoyl-\alpha-bromo iso valeryl$ amide, a-bromo- (Perelstein and Bürgi), A., i, 166.

3-isoValeryl-p-cresol, 3-a-chloro- (v. Au-WERS and MÜLLER), A., i, 29.

isoValerylglycollic acid. See isoValeryloxyacetic acid.

isoValerylmandelic acid. See isoValeryloxyphenylacetic acid.

isoValeryloxyacetic acid (CHEMISCHE FABRIK VON F. HEYDEN), A., i, 264.

isoValeryloxyphenylacetic acid (CHEM-ISCHE FABRIK VON F. HEYDEN). A., i, 263.

and its calcium salt (Voswinckel), A., i, 167.

Vanadium, resistance limit of mixed crystals of iron and (TAMMANN), A., ii, 235.

Vanadic acid, estimation of, by electrolytic reduction (GOOCH and SCOTT), A., ii, 373.

Vanadium detection, estimation, and separation :---

detection of, in water (MEAURIO), A.,

estimation of, by means of carbon tetrachloride (Jannasch and Harwood), A., ii, 373.

estimation of, in presence of molybdenum (Travers), A., ii, 135.

estimation of, in presence of titanium (FENNER), A., ii, 372.

separation of phosphorus and (KROPF), A., ii, 173.

Vanillin-2:4-dichlorophenylhydrazone (BüLow and Huss), A., i, 314.

Vanillylidenediacetophenone, and its henzoyl derivative (Nomura and Nozawa), A., i, 439. Vapour density, Victor Meyer apparatus

for determination of (MACINNES and Kreiling), A., ii, 32.

Vapour determination pressure, (Brunelli; Ariès), A., ii, 352.

Raoult's law of, kinetic theory of (JÄGER), A., ii, 187.

relation between temperature and (HAM, CHURCHILL, and RYDER), A., ii, 292.

of dissociating compounds (WEG-SCHEIDER), A., ii, 298.

of liquids (ARIES), A., ii, 61, 186.

of liquid metals (HILDEBRAND), A., ii, 61.

of solutions (VAN KLOOSTER), A., ii, 74. of diatomic liquids (ARIÈS), A., ii, 151.

of tetra-atomic substances (ARIES), A., ii, 219.

of penta-atomic compounds (ARIÈS), A., ii, 258.

of octa-atomic compounds (ARIÈS), A., ii, 294.

Vegetable fluids, processes of oxidoreduction in (ABELOUS and ALOY), A., i, 150.

Velocity constants, calculation of (Lewis), T., 471; A., ii, 263.

Velocity of capillary ascension of liquids (Lucas), A., ii, 391.

Velocity of catalytic hydrogenation, influence of carbon monoxide on (MAXTED), A., ii, 72.

Velocity of chemical reactions (Mc-

BAIN), A., ii, 40.

Velocity of hydrolysis of esters (Verkade; Anderson and Pierce), A., ii, 103; (Palomaa; Bürki), A., ii, 434.

Velocity of reaction, influence of lipoids on (SIEGFRIED), A., ii, 223.

at constant pressure (Todd), A., ii, 190.

at constant volume (Todd) A., ii, 102.

Velocity of solution of metals in acids (Centnerszwer), A., ii, 162.

Veratric acid, amino-, and bromoamino-, acetyl derivatives (Simonsen and RAU), T., 788.

Veratrine (FREUND and SCHWARZ), A., i, 304.

Veratrole, derivatives of (KAUFMANN and MÜLLER), A., i, 178.

Veratrole, 4-amino-, and 5-nitro-4amino-, and their acetyl derivatives (SIMONSEN and RAU), T., 27; A., i, 116.

bromo-, bromoamino- and bromonitroderivatives, and their acetyl and benzoyl derivatives (SIMONSEN and RAU), T., 784; A., i, 587.

3:5:6-trinitro- (Pollecoff and Robinson), T., 654; A., i, 428.

Veratrole 6-sulphonic acid, 3:5-dinitrosodium salt (Pollecoff and Robinson), T., 655.

p-Veratroylcarbinol. See 3:4-Dimethoxybenzoylmethyl alcohol.

o-Veratryl alcohol. See 2:3-Dimethoxybenzyl alcohol.

o-Veratrylhomopineronylamine, and its hydrochloride (KAUFMANN and MÜL-LER), A., i, 178.

o-Veratrylidenehomoriperonylamine (KAUFMANN and MÜLLER), A., i,

o-Vinylbenzylmethylethylamine, and its salts (v. Braun and Köhler), A., i, 186.

1-o-Vinylbenzylmorpholine, and its salts and derivatives (v. Braun and Köhler), A., i, 269.

2-\(\beta\)-Winyloxyethyldihydroisoindole, and its salts and derivatives (v. Braun and Kohler), A., i, 269.

Viridite (Kretschmer), A., ii, 171.

Vivianite from phosphate deposits of Florida (WATSON and GOOCH), A., ii, 119.

Viscosimeter, modified (Lidstone), A., ii, 221.

for use with blood (TREVAN), A., i, 355.

Viscosity of liquefied gases (VERSCHAF-FELT), A., ii, 221.

of volatile liquids (LIDSTONE), A., ii, 221.

Vitamine, fat-scluble (STEENBOCK, BOUTWELL, and KENT), A., i, 513.
Vitamines (DUTCHER and COLLATZ).

A., i, 561.

pharmacology of (UHLMANN), A., i, 419, 563.

Volatile substances, apparatus for manipulation of (Stock), A., ii, 353.

Volcanic deposits, boron, lithium and thallium in (BRUN), A., ii, 323.

Volume, changes of, on mixing chemically indifferent gases (Fuchs), A., ii, 298.

Volume, specific, and fluidity of aqueous solutions (Henz), A., ii, 155. of liquid mixtures (Henz), A., ii, 389.

Volume curves, solid and liquid, convergence of (LE BAS), A., ii, 33.

Volume elasticity, atomic heat and frequency of monatomic metals (Ber-NOULLI), A., ii, 427.

Volumeter for anærobic culture (North-RUP), A., i, 468.

Volutin, development of, in cells, and its composition (VAN HERWERDEN), A., i, 282.

W.

Wagner rearrangement (Ruzička), A., i, 398.

Wagner-Saytzeff reaction (ENKLAAR), A., i, 154.

Walden inversion (SENTER and TUCKER), T., 140; A., i, 166; (SENTER, DREW, and MARTIN), T., 151; A., i, 166; (CLOUGH), T., 526; A., ii, 255.

Water, proof of the formation of, from the action of acids with bases (FRANCK), A., ii, 112.

constitution of, and osmotic pressure (Bousfield), A., ii, 64.

vapour, ultra-red absorption spectrum of (HETTNER), A., ii, 282.

spectrum of, in the solar spectrum (FOWLER), A., ii, 281.

(Fowler), A., ii, 281. liquid, heat of formation of, from its ions (Muller), A., ii, 61. (o-Xylene, Me: Me = 1:2; m-xylene, Me: Me = 1:3; p-xylene, Me: Me = 1:4.)

Water, effect of dissolved substances on the velocity of crystallisation of (Brann), A., ii, 393.

solubility of oxygen in (Coste), A., ii,

vapour pressure of (BRUNELLI), A., ii, 352.

still for preparation of pure (Moseley and Myers), A., ii, 428.

distilled, evolution of carbon dioxide from, under pressure (PATTEN and Mains), A., ii, 197.

influence of carbon dioxide dissolved in, in alkalimetry (Bruhns), A., ii, 453.

Conductivity water, pure, preparation of (Weiland), A., ii, 56.

NATURAL WATER:-

Potable or drinking water, estimation of phosphoric acid in (VAN Eck), A., ii, 370.

Rain-water, nitrogen, chlorine, and sulphur in (PECK), A., i, 96.

detection of hydrogen selenide in (GASSMANN), A., ii, 309.

Sea-water, de-salting of (BRIEGER), A., ii, 264.

from the China Sea, radium content of (WRIGHT and HEISE), A., ii, 420.

off Plymouth, phosphoric acid in (MATTHEWS), A., ii, 197.

estimation of gold in (KOCH), A., ii, 186.

Spring and mineral waters of Bellville, Argentina, arsenic and vanadium in (Bado), A., ii, 402.

in Northern Luzon, radioactivity of

(Heise). A., ii, 182.

of Neuchâtel and Seeland, radio-activity of (Perret and Ja-QUEROD), A., ii, 255.

Philippine, radioactivity of (HEISE), A., ii, 182.

detection and estimation of bromine in (Casares and Tastet), A., ii, 330.

Water analysis:-

analysis of, in the field (HEISE and Behrman), A., ii, 205.

detection of nitrates in (Escaïch), A., ii, 273.

detection of vanadium in (MEAURIO), A., ii, 135.

detection and estimation of lead in

(MELDRUM), A., ii, 83. estimation of hardness of (Berczel-LER), A., ii, 132; (WAGNER), A., ii, 174; (BEHRMAN), A., ii, 206.

estimation of magnesia in (Monнаирт), А., іі, 335.

Water-fleas, action of narcotics and potassium cyanide on (BUYTENDYK), A., i, 468.

Water-in-oil emulsions (SCHLAEPFER), T., 522; A., ii, 260; (HALL), A., ii, 10.

Water pump. See Pump.

Wax, paraffin. See Paraffin wax.

Waxes, animal and vegetable (WEIN-HAGEN), A., i, 56.

dropping-point apparatus for analysis of (Dupré), A., ii, 376.

Weights, molecular, pressure method for determination of (CHAPIN), A., ii,

> of metallic salts in urethane (BRUNI). A., ii, 432.

Wheat, non-protein nitrogen in the flour of (BLISH), A., i, 332.

sterol content of (ELLIS), A., i, 420. White metal, analysis of (Kurek and

FLATH), A., ii, 242. White precipitate. See Mercuric am-

monium chloride under Mercury. Whitneyite (Borgström), A., ii, 169.

Wines, estimation of acidity in (Du-BOUX), A., ii, 136.

Wolfram ores, estimation of tin in (POWELL), A., ii, 410.

Wood fibres, colour reaction of, with phenylhydrazine (JENTSCH), A., ii, 248. Wood pulp (SCHWALBE), A., i, 292.

Wool, azo-dyes for (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 273.

Wounds, chemistry of colloids in relation to the healing of (v. GAZA), A., i, 514.

formation of ptomaines in (BERTHE-LOT), A., i, 147.

X.

X-rays. See Rays, Röntgen.

Xanthic acids, rate of decomposition of (v. Halban and Hecht), A., ii, 222.

phosphotungstate Xanthine (Drummond), A., i, 337.

Xanthochroite (Rogers), A., ii, 122. Xanthone-1-carboxylic acid, 2:3:4-tri-

chloro-6-hydroxy-, and its salts (ORN-DORFF and Adamson), A., i, 435.

Xanthosiderite, and its change into "glaskopf" (Leitmeier and Gold-schlag), A., ii, 118.

Xanthosuccinnamic acids, stereochemistry of (Holmberg and Lenander), A., i, 529.

Xvlene, estimation of, in gases (H. S. and M. D. Davis, and MacGregor), A., ii, 411.

m- and p-Xylene, dithiol-derivatives of (Pollak and Schadler), A., i, 497.

(o-Xylene, Me: Me = 1:2; m-xylene, Me: Me = 1:3; p-xylene, Me: Me = 1:4.)

m- and p-Xylenedithiolacetic acid (Pol-LAK and SCHADLER), A., i, 497.

Xylohexosamic acids (LEVENE), A., i, 531. d-d-Xylohexosamolactone hydrochloride

(LEVENE), A., i, 531.

I-Xylose, oxidation of, in alkaline solution (NEF, HEDENBURG, and GLATT-FELD), A., i, 100.

as.-m-Xylyl ethyl ether (v. Auwers),

A., ii, 343.

m-2-Xylylhydroxylamine,action methyl alcohol and sulphuric acid with (Bamberger), A., i, 341.

o- and m-4-Xylyl a-hydroxystyryl ketones (JÖRLANDER), A., i, 20.

m-Xylyl-4-methyl diketone, 5-hydroxy-, di-p-nitrophenylhydrazone (v. WERS), A., i, 195.

Y.

Yeast, autolysis of (VANSTEENBERGE), A., i, 147.

action of arsenic salts on (Boas), A., i, 148.

enzymes of (Ivanov), A., i, 365.

extraction of invertase and maltase from (Buchner and Reischle), A., i, 54.

presence of co-ferment of, in the animal organism (MEYERHOF), A., i, 464.

rate of growth of (SLATOR), A., i, 564.

water-soluble growth-promoting substance in (DRUMMOND), A., i, 148. secretion of a chromogen by (Beyen-

inck), A., i, 470. antineuritic and antiscorbutic factors in (HARDEN and ZILVA), A., i,

365. intermediate reactions in fermentation with (v. Euler, Ohlsen, and Johansson), A., i, 149.

plant function of, in alcoholic fermenta-

tion (LINDET), A., i, 329. the organism utilisation of, in (Schill), A., i, 359.

reactivation of, by muscle extracts (MEYERHOF), A., i, 242.

experiments on the culture of (Bo-KORNY), A., i, 91.

living, formation of zymophosphates by (v. EULER), A., i, 329.

Yeast-nucleic acid, preparation of (BAU-

MANN), A., i, 273. structure of ('THANNHAUSER and DORF-MULLER), A., i, 47; (LEVENE), A., i, 130, 240

Zeolite, new, from Iceland (CALLISEN), A., ii, 326.

Zeolites, nature of the water contained in (Stoklossa), A., ii, 122.

Zinc, ionisation and resonance potentials of (TATE and FOOTE), A., ii, 94.

formation of crystals in rods of (FRAENKEL), A., ii, 17.

action of allyl bromide and mesityl oxide with (ENKLAAR), A., i, 154.

distribution and elimination of, in the body (SALANT, RIEGER, and TREUT-HARDT), A., i, 326.

Zinc alloys, rate of solution of, in acids (Centnerszwer), A., ii, 162.

with copper, effect of small quantities of cadmium on (GUILLET), A., ii, 199.

Zinc bases (zincammines), salts of, with organic acids (EPHRAIM and ROSEN-BERG), A., i, 390.

Zinc arsenates, colloidal (KLEMP and v. Gyulay), A., ii, 200.

carbonate, equilibrium in the system: carbon dioxide, water and (SMITH), A., ii, 261.

chloride compound of dimethylaniline, benzyl chloride and (CHEMICAL Works, Rohner & Co.), A., i, 260. selenide, formation of (CHIKASHIGE

and Kurosawa), A., ii, 112. Zinc organic compounds :-

with triethylenediamine (JAEGER and Kahn), A., i, 8.

Zinc estimation and separation :-

estimation of (HASSREIDTER), A., ii,

estimation of, volumetrically (How-DEN), A., ii, 408.

commercial, analysis of (Bertiaux), A., ii, 408.

estimation of, as zinc mercury thiocyanate (Jamieson), A., ii, 335.

estimation of, on galvanised iron (BAUER), A., ii, 132.

estimation of, in zinc dust (WILSON), A., ii, 371.

estimation and separation of (CARNOT), A., ii, 133.

Zinc blende. See Blende.

Zinc dust, impurity of (BINDER), A., ii,

estimation of zinc in (WILSON), A., ii, 371.

Zinc electrode. See Electrode. Zingiberone (Nomura), A., i, 396.

Zircon, analysis of (Brown), A., ii,

Zirconium, line spectrum of (DE GRA-MONT), A., ii, 90.

Zirconium nitride (Bruère and Chauvenet), A., ii, 321.

Zirconyl nitrates (Chauvenet and Nicolle), A., ii, 234.

double sulphates (CHAUVENET and GUEYLARD), A., 269, ii, 321.

Zirconium detection and separation :detection of, colorimetrically, with pyrogallolaldehyde (KASERER), A., ii,

separation of titanium, aluminium, iron, manganese and (BROWN), A., ii, 84.

Zymophosphates, formation of, by living yeast (v. Euler), A., i, 329.

CXIV. ii. 83